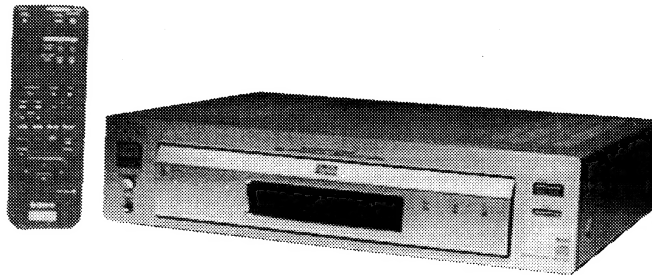


DVP-S7000

RMT-D100A/D100E

SERVICE MANUAL

US Model
Canadian Model
E Model



SPECIFICATIONS

CD/DVD player

Laser Semiconductor laser
Signal format system NTSC

Audio characteristics

Frequency response DVD (PCM): 2 Hz to 22 kHz (± 0.5 dB)
CD: 2 Hz to 20 kHz (± 0.5 dB)
Signal-to-noise ratio More than 107 dB
Harmonic distortion Less than 0.0028%
Dynamic range More than 97 dB
Wow and flutter Less than detected value
($\pm 0.001\%$ W PEAK)

Outputs and inputs

	Jack type	Maximum output level	Load impedance
LINE OUT (AUDIO 1, 2)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Phono jacks	0.5 Vp-p	75 ohms terminated
LINE OUT (VIDEO)	Phono jack	1.0 Vp-p	75 ohms, sync negative
S VIDEO OUT	4-pin mini DIN	Y: 1.0 Vp-p C: 0.286 Vp-p	75 ohms, sync negative
COMPONENT VIDEO OUT (Y, B-Y, R-Y)	Phono jacks	Y: 1.0 Vp-p B-Y, R-Y: 0.7 Vp-p	75 ohms, sync negative 75 ohms
PHONES	Phone jack	12 mW	Over 8 ohms
S-LINK	Mini jack		

General

Power requirements 120 V AC, 60 Hz: US/Canadian model
220 - 240 V AC, 50 Hz: E model
Power consumption 28 W
Dimensions (approx.) 430 x 111 x 395 mm (17 x 4 3/8 x 15 5/8 in.) (w/h/d)
incl. projecting parts
Mass (approx.) 7.0 kg (15 lb 7 oz)
Operating temperature 5 °C to 35 °C (41 °F to 95 °F)
Operating humidity 5% to 90%

Supplied accessories

- Audio connecting cord (1)
- Video connecting cord (1)
- S video cable (1)
- S-link cable (1)
- Remote commander (remote) RMT-D100A (1)
- Sony SUM-3 (NS) batteries (2)

Design and specifications are subject to change without notice.

Note: Video-CD recorded in PAL mode by overseas type model can be played.



CD/DVD PLAYER

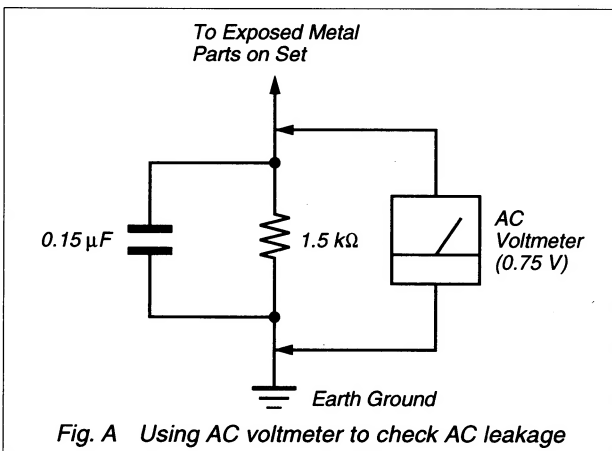
SONY®



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COM- POSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
Service Note		5	5.	IC PIN FUNCTION DESCRIPTION	
1.	GENERAL		5-1.	Interface Control Pin Function (MB-75 Board IC021)	5-1
	Getting Started	1-1	5-2.	Drive Control Pin Function (MB-75 Board IC136)	5-2
	Basic Operations	1-2	5-3.	Extended Output Port 0 (MB-75 Board IC147)	5-3
	Playing Discs in Various Modes	1-8	5-4.	Extended Output Port 1 (MB-75 Board IC148)	5-3
	Setting and Adjustments	1-10	5-5.	Extended Output Port 2 (MB-75 Board IC149)	5-3
	Additional Information	1-12	5-6.	Extended Output Port 3 (MB-75 Board IC150)	5-3
2.	DISASSEMBLY		5-7.	Extended Input Port 0 (MB-75 Board IC151)	5-4
2-1.	Case Removal	2-1	5-8.	Extended Input Port 1 (MB-75 Board IC152)	5-4
2-2.	Front Panel Removal	2-1	5-9.	D/A Converter (MB-75 Board IC722)	5-4
2-3.	DC Motor (Door Open/Close) Removal	2-1	5-10.	System Control Pin Function (MB-75 Board IC090)	5-5
2-4.	AU-194 Board Removal	2-1	6.	TEST MODE	
2-5.	MB-75 Board Removal	2-2	6-1.	Starting up Test Mode	6-1
2-6.	MD Block Ass'y Removal	2-2	6-2.	Syscon Diagnosis	6-1
2-7.	Try Removal	2-2	6-3.	Drive Auto Adjustment	6-10
2-8.	Optical Pick-up Removal	2-2	6-4.	Drive Manual Operation	6-13
2-9.	TT-701 Board Removal	2-2	6-4-1.	Drive Manual Operation wnu creen	6-13
2-10.	Internal Views	2-3	6-4-2.	Disc Type	6-13
2-11.	Circuit Boards Location	2-4	6-4-3.	Manual Control 1	6-13
3.	BLOCK DIAGRAMS		6-4-4.	Manual Control 2	6-14
3-1.	Overall Block Diagram 1 (RF, Servo, Audio Power)	3-1	6-4-5.	Manual Control 3	6-14
3-2.	Overall Block Diagram 2 (Signal Process)	3-6	6-4-6.	Manual Adjust 1	6-15
3-3.	RF/Servo Block Diagram	3-11	6-4-7.	Manual Adjust 2	6-15
3-4.	Data Process Block Diagram	3-14	6-4-8.	Auto Adjust	6-15
3-5.	Video Block Diagram	3-16	6-4-9.	Check	6-16
3-6.	System Control Block Diagram	3-21	6-5.	Emergency History	6-18
3-7.	Audio Block Diagram	3-24	6-6.	Other Checks	6-18
3-8.	Mode Control Block Diagram	3-27	7.	ELECTRICAL ADJUSTMENT	
3-9.	Power Supply Block Diagram	3-30	7-1.	Power Supply Check	7-1
4.	PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS		1.	PS-393 Board	7-1
4-1.	Frame Schematic Diagram	4-1	2.	MB-75 Board	7-1
4-2.	Printed Wiring Boards and Schematic Diagrams	4-5	7-2.	Adjustment of System Control	7-2
	TT-701, LM-51 Printed Wiring Boards	4-5	1.	27 MHz Free Run	7-2
	TT-701, LM-51 Schematic Diagram	4-7	2.	22 MHz Adjustment	7-2
	MB-75 Printed Wiring Board	4-11	3.	33 MHz Check	7-2
	MB-75 (Interface) Schematic Diagram	4-15	4.	33 MHz Lock Check	7-2
	MB-75 (CPU) Schematic Diagram	4-18	5.	24 MHz Adjustment	7-3
	MB-75 (Drive Control) Schematic Diagram	4-21	6.	36 MHz Check	7-3
	MB-75 (DVD Data Process) Schematic Diagram	4-24	7.	36 MHz Lock Check	7-3
	MB-75 (CD ROM Decode) Schematic Diagram	4-27	8.	16 MHz Check	7-3
	MB-75 (MPEG Video Decode) Schematic Diagram	4-30	7-3.	Adjustment of Video System	
	MB-75 (Video EQ, Letter Box, Sub Picture) Schematic Diagram	4-33	1.	Video Level Adjustment	7-4
	MB-75 (Audio Decode) Schematic Diagram	4-36	2.	S-Terminal Output Check	7-4
	MB-75 (Video) Schematic Diagram	4-39	3.	Checking Composite Video Output B-Y	7-4
	MB-75 (Digital Servo) Schematic Diagram	4-43	4.	Checking Composite Video Output R-Y	7-5
	MB-75 (RF Block) Schematic Diagram	4-47	5.	Checking Composite Video Output Y	7-5
	MB-75 (Drive) Schematic Diagram	4-51	6.	Checking S Video Output S-C	7-5
	CN-99, DR-84, FL-73, FL-80, FP-411, HP-92 Printed Wiring Boards	4-55	7.	Checking S Video Output DC Level	7-5
	CN-99, DR-84, FL-73, FL-80, FP-411, HP-92 Schematic Diagram	4-57	7-4.	Adjustment Related Parts Arrangement	7-6
	AU-194, PS-393 Schematic Diagram	4-59	8.	REPAIR PARTS LIST	
	AU-194, PS-393 Printed Wiring Boards	4-63	8-1.	Exploded Views	8-1
			8-1-1.	Case Assembly	8-1
			8-1-2.	Front Panel Assembly	8-2
			8-1-3.	Chassis Assembly	8-3
			8-1-4.	DVD Mechanism Chassis Assembly (1)	8-4
			8-1-5.	DVD Mechanism Chassis Assembly (2)	8-5
			8-2.	Electrical Parts List	8-6

SERVICE NOTE

1. DISK REMOVAL PROCEDURE (at POWER OFF)

1-1. How to Open the Door

- 1) With the top case removed, rotate the gear (D) ① in direction ① to open the door. (See Fig. 1)

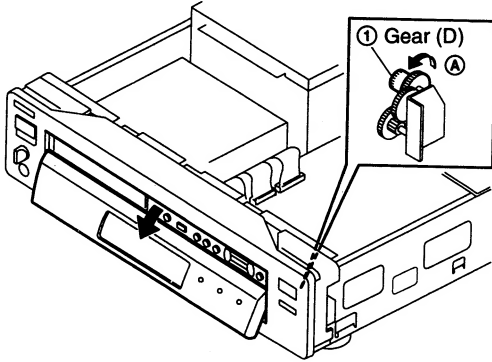


Fig. 1

1-2. How to Draw out Tray

- 1) Insert a cross-tip screwdriver into a hole at the bottom, and rotate the cam gear ② in direction ②. (See Fig. 2)
Note: To prevent a damage of cam gear, rotate it in direction ② by 1/4 turn.
- 2) Draw out the tray ③ in direction ③ by hand, and remove a disk. (See Fig.2)

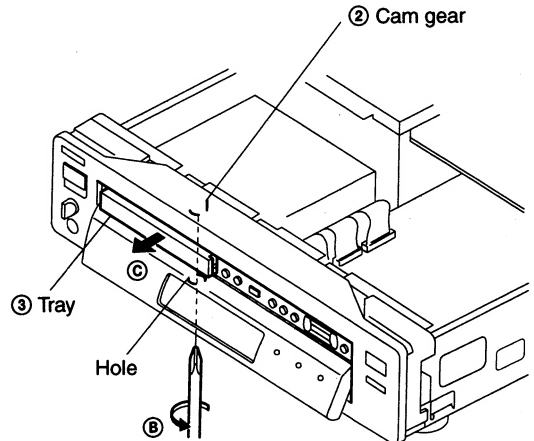


Fig. 2

2. HOW TO SERVICE THE MD BLOCK ASS'Y

- 1) Remove the top case from the main unit. (Refer to 2-1)
- 2) Remove the front panel. (Refer to 2-2)
Note: Do not disconnect wiring.
- 3) Remove the MD block ass'y. (Refer to 2-6)
- 4) Remove the MD upper cover, and mount as shown in Fig. 3.

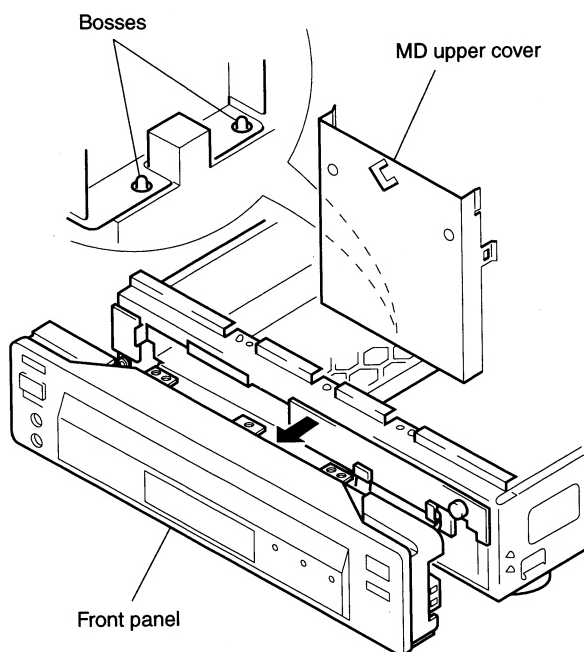


Fig. 3

3. HOW TO SERVICE AU-194 AND MB-75 BOARDS

- 1) Remove the top case from the set. (Refer to 2-1)
- 2) Remove the AU-194 board. (see 2-4)
Note: Do not disconnect wiring.
- 3) Remove the MB-75 board. (See 2-5)
Note: Do not disconnect wiring.
- 4) Erect MB-75 board on three circuit board holders. (see. Fig. 5)
- 5) Erect AU-194 board on two claws. (See Fig. 5)

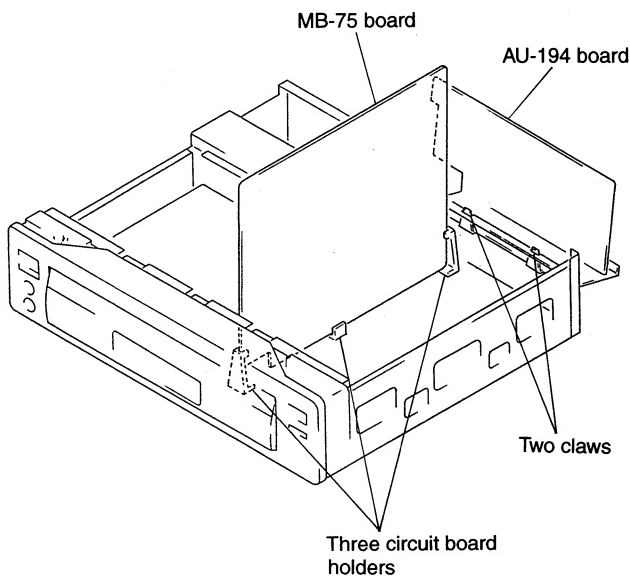


Fig. 5

- 5) Install the MD block ass'y as shown in Fig. 4.
Note: Place a cushion at the position (A).
- 6) Connect three flexible flat cables.

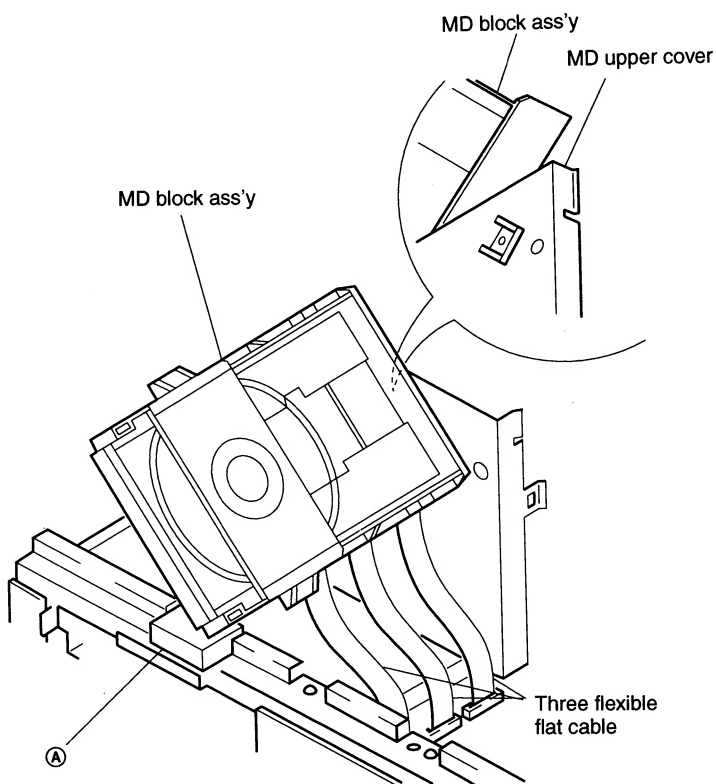


Fig. 4

4. REPLACING OPTICAL PICK-UP

4-1. Handling

- 1) A red laser diode for DVD requires more attention to static electricity than general infrared laser diodes for CD. Because its durability to static electricity is far weaker than that of infrared laser diodes, always use an earth band when handling the optical pick-up block as service parts.
- 2) As for the flexible board KHS-180A (RP) packed as service parts, the short lands have been soldered to protect from static electricity. Accordingly, remove solders when replacing optical pick-up. (See Fig. 6)

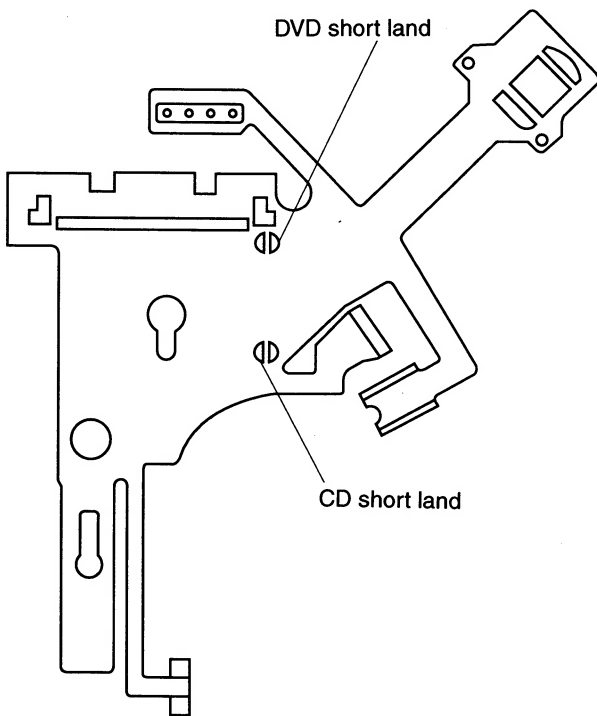
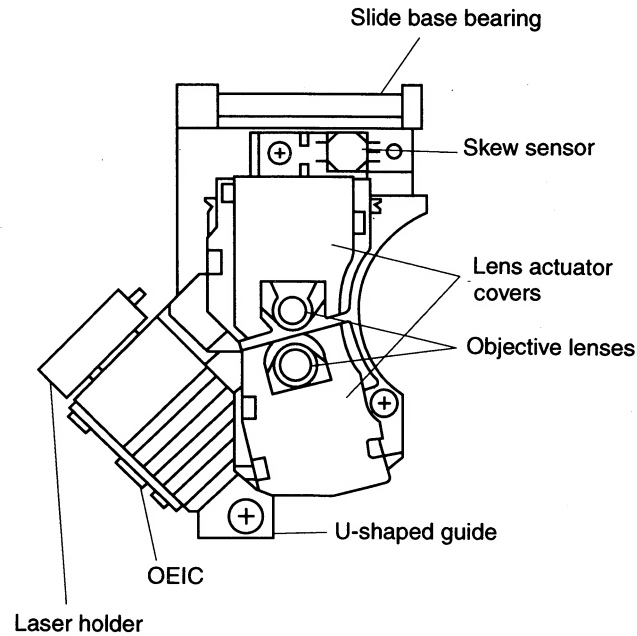


Fig. 6 Flexible board

- 3) In handling the KHS-180A (RP), do not touch inhibited parts shown in Fig. 7, but grip the slide base bearing and U-shaped guide.



- Touch inhibited parts
- Objective lens
 - Skew sensor
 - Laser holder
 - Laser coupler
 - Flexible board
 - OEIC
 - Lens actuator covers

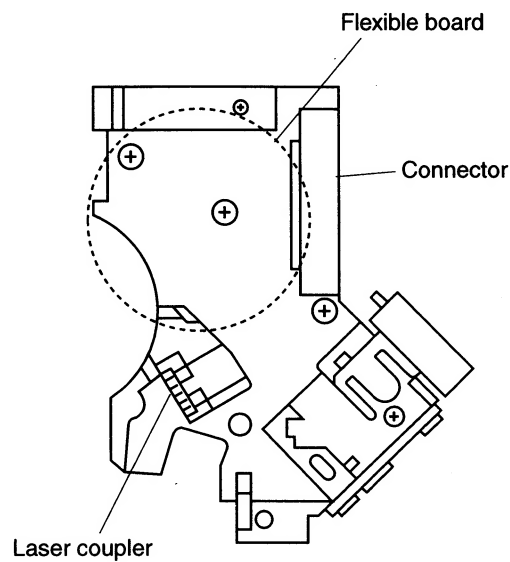


Fig. 7 KHS-180A (RP)

5. NOTE ON MOUNTEING SLED MOTOR

- 1) Push the sled motor ass'y ① toward direction ①A. (See Fig.8)
- 2) Tighten two screws ② (M1.7 × 2.5).

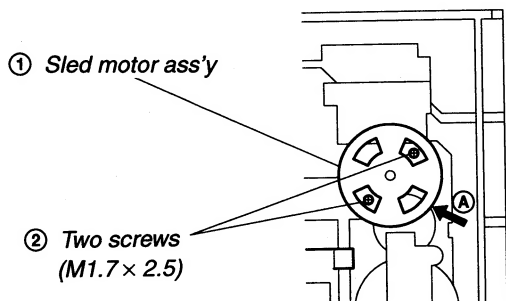


Fig. 8

- 3) Raising the MD block ass'y ③ 90 ° with the side down, confirm that the optical pick-up ④ falls by self weight. (See Fig. 9)
- 4) Further, with the front side of MD block ass'y ③ up, confirm that the optical pick-up falls by self weight.

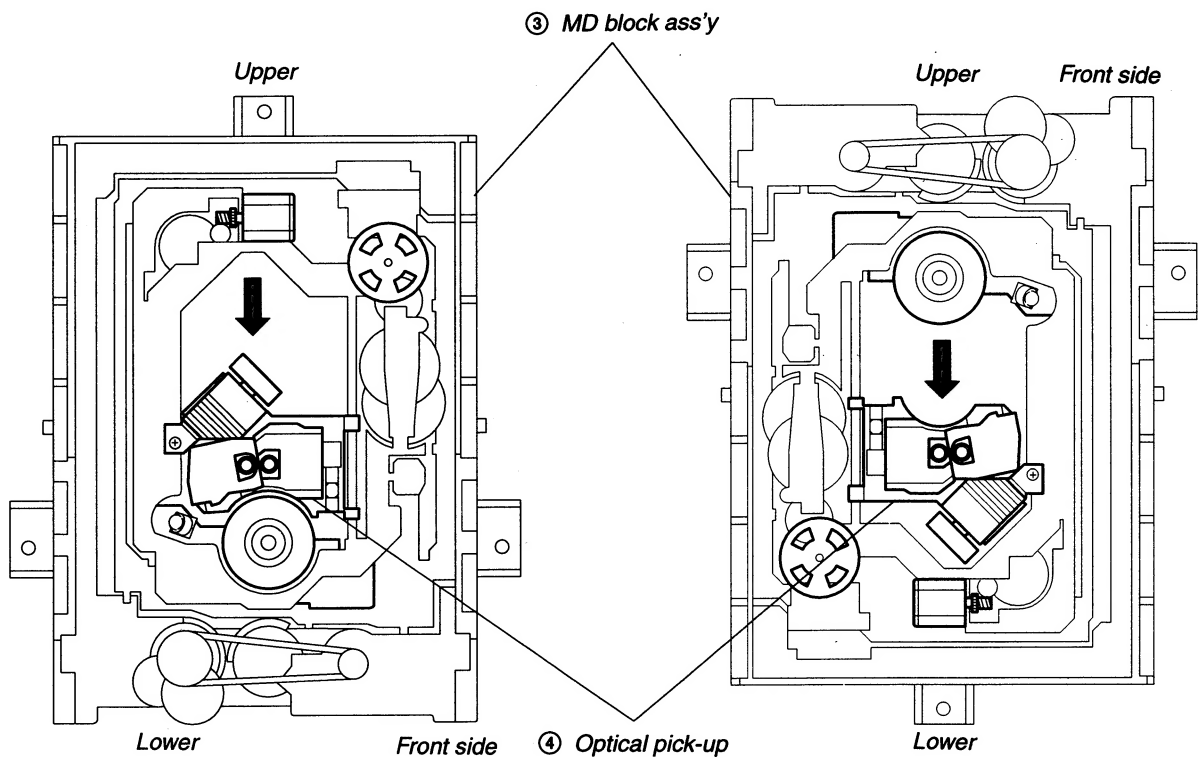


Fig. 9

SECTION 1
GENERAL

This section is extracted from
instruction manual.

About This Manual

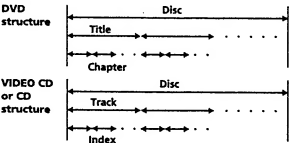
The instructions in this manual are for model DVP-S7000.

- Conventions
- Instructions in this manual describe the controls on the player.
 - You can also use the controls on the remote if they have the same or similar names as those on the player.
 - The icons on the right are used in this manual:

Icon	Meaning
	Indicates that you can use only the remote to do the task.
	Indicates tips and hints for making the task easier.
	Indicates the functions for DVD VIDEOS.
	Indicates the functions for VIDEO CDs.
	Indicates the functions for CDs.

Terms for discs

- **Title**
The longest sections of a picture or a music piece on a DVD; a movie, etc. for a picture piece on a video software or an album, etc. for a music piece on an audio software. Each title is assigned a title number enabling you to locate the title you want.
- **Chapter**
Sections of a picture or a music piece that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want. Depending on the disc, no chapter may be recorded.
- **Track**
Sections of a picture or a music piece on a VIDEO CD or a CD. Each track is assigned a track number enabling you to locate the track you want.



- **Index**
A number that divides a track into some sections to easily locate the point you want on a VIDEO CD or a CD. Depending on the disc, no index may be recorded.
- **Scene**
On a VIDEO CD with PBC functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes." Each scene is assigned a scene number enabling you to locate the scene you want.

Note on PBC (Playback Control) (VIDEO CDs)
This player conforms to Ver. 1.1 and Ver. 2.0 of VIDEO CD standards. You can enjoy two kinds of playback according to the disc type.

Disc type	You can
VIDEO CDs without PBC functions (Ver. 1.1 discs)	Enjoy video playback (moving pictures) as well as music.
VIDEO CDs with PBC functions (Ver. 2.0 discs)	Play interactive software using menu screens displayed on the TV screen (PBC Playback), in addition to the video playback functions of Ver. 1.1 discs. Moreover, you can play high-resolution still pictures, if they are included on the disc.

Discs that the player cannot play
The player cannot play discs other than the ones listed in the table on page 4 such as CD-ROMs including PHOTODISCs, data sections in CD-EXTRAS and DVD-ROMs.

This Player Can Play the Following Discs

	DVD VIDEOS		VIDEO CDs		Audio CDs	
Disc logo						
Contents	Audio + Video		Audio + Video		Audio	
Disc size	12 cm	8 cm	12 cm	8 cm	12 cm	8 cm (CD single)
Play time	About 4 h (for single-sided DVD)/ about 8 h (for double-sided DVD)	About 80 min. (for single-sided DVD)/ about 160 min. (for double-sided DVD)	74 min.	20 min.	74 min.	20 min.
Reference pages for basic operations	Pages 10 to 17		Pages 18 to 25		Pages 26 to 31	

"DVD-VIDEO" logo is a trademark.

This player conforms to the NTSC color system. You cannot play discs recorded in other color systems such as PAL and SECAM.

Region code of DVDs you can play
Region code indications such as are labeled on some DVDs to indicate which type of player can play the discs. Unless "1" is included in the indications or is labeled on the DVDs, you cannot play the discs on this player. If you try to play these DVDs, the message "PLAYING THIS DISC PROHIBITED BY AREA LIMITS" will appear on the TV screen. Depending on the DVD, no region code indication may be labeled even though playing the DVD is prohibited by the area limits.

Note on playback operations of DVDs and VIDEO CDs
Some playback operations of DVDs and VIDEO CDs may be intentionally fixed by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs or VIDEO CDs.

Getting Started

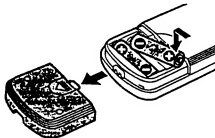
Getting Started

Unpacking

- Check that you have the following items:
- Audio connecting cord (1)
 - Video connecting cord (1)
 - S-video cable (1)
 - S-link cable (1)
 - Remote commander (remote) RMT-D100A (1)
 - Sony SUM-3 (NS) batteries (2)

Inserting batteries into the remote

You can control the player using the supplied remote. Insert two R6 (size AA) batteries by matching the + and - on the batteries. When using the remote, point it at the remote sensor on the player.



You can control Sony TVs with the mark using the supplied remote. See page 42.

When to replace batteries
With normal use, the batteries should last for about six months. When the remote no longer operates the player, replace all the batteries with new ones.

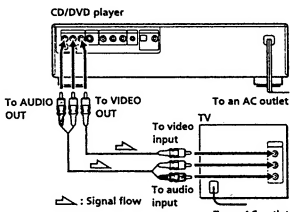
- Notes
- Do not leave the remote in an extremely hot or humid place.
 - Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
 - Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
 - If you will not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Hooking Up the System

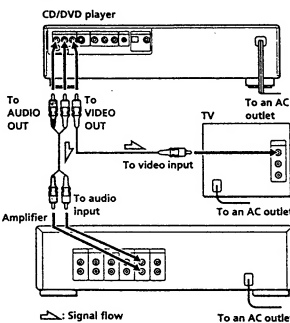
Overview

This section describes how to hook up the CD/DVD player to a TV (with audio/video input jacks) and/or an amplifier. You cannot connect this player to a TV without a video input connector. Be sure to turn off the power of each component before making the connections.

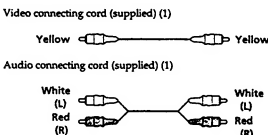
■ To listen to the sound through TV speakers



■ To listen to the sound through speakers connected to an amplifier



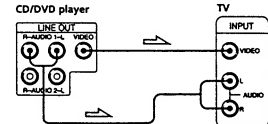
What cords will I need?



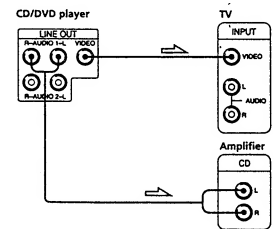
Hookups

When connecting the cord, be sure to match the color-coded cord to the appropriate jacks on the components: Yellow (video) to Yellow, Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.

■ To listen to the sound through TV speakers



■ To listen to the sound through speakers connected to an amplifier



Make the same connections when your amplifier conforms to "Pro Logic."

Notes

- Do not connect this player to a video deck. If you view the pictures on your TV after making connections shown on the right, a picture noise may appear.
- Depending on the TV or amplifier, the sound distortion may occur because the audio output level is high. In this case, set "AUDIO ATT" in "CUSTOM SETUP" to "ON" in the menu. For details, see page 46.

If your TV or VCR has an S-video input connector
Connect the component via the S VIDEO OUT connector using the S video cable (supplied) instead of the video connecting cord. You will get a better picture.



If you connect the player to a monitor or projector with component video input connectors that conform to output signals from the COMPONENT VIDEO OUT (Y, B-Y, R-Y) connectors on the player
Connect the component via the COMPONENT VIDEO OUT connectors using three video connecting cords (not supplied) of the same kind. You will get a better picture.

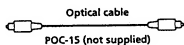


- Notes
- Refer to the instructions supplied with the component to be connected.
 - You cannot connect the player to the Y/Pa/Ps input connectors on a Hi-Vision TV.

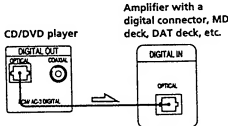
(Continued)

If you have a digital component such as an amplifier with a digital connector, DAT or MD
Connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial cable (not supplied).
When you play a DVD, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "PCM" in the menu. (page 47)
When you play a VIDEO CD, set "VIDEO CD DIGITAL OUT" in "INITIAL SETUP" to "ON" in the menu. (page 47)

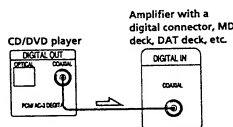
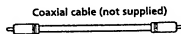
When using an optical cable



Take off the cap and plug in the optical cable.



When using a coaxial cable



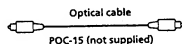
Notes

- Refer to the instructions supplied with the component to be connected.
- You cannot make digital audio recordings of discs recorded in Dolby Digital (AC-3) format directly using an amplifier with a digital connector, MD deck or DAT deck.

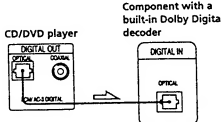
When you make the connections above, do not set "DVD DIGITAL OUT" in "INITIAL SETUP" to "AC-3 Digital." If you do, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.

If you have a digital component with a built-in Dolby Digital decoder
Connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial cable (not supplied). When the component with a built-in Dolby Digital decoder is connected, the player plays DVDs with sound recorded in Dolby Digital (AC-3) format while producing the effect of being in a movie theater or a concert hall.
In the menu, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "AC-3 Digital." (page 47)

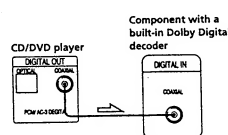
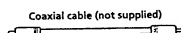
When using an optical cable



Take off the cap and plug in the optical cable.



When using a coaxial cable



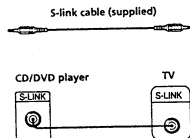
Note

Refer to the instructions supplied with the component to be connected.

Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby", the double-D symbol DD, "Pro Logic" and "AC-3" are trademarks of Dolby Laboratories Licensing Corporation.

If your TV has an S-link connector

You can control the CD/DVD player from the TV. Connect the TV via the S-LINK connector using the S-link cable (supplied). Refer to the instructions supplied with the TV to be connected.



Necessary Setup Before Using the Player

Some setups are necessary for the player depending on the TV or other components to be connected. For details on using the menu, see page 43. For details on each menu item, see pages 44 to 47.

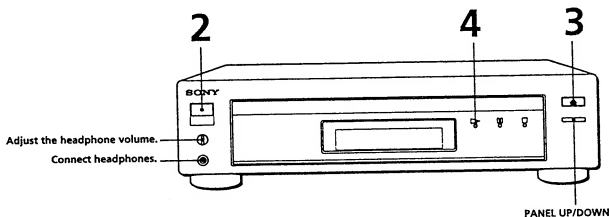
- To connect the player to a wide-screen TV
In the menu, set "TV TYPE" in "INITIAL SETUP" to "16:9."
- To connect the player to a normal TV
In the menu, set "TV TYPE" in "INITIAL SETUP" to "4:3."
- To listen to the stereo sound through speakers connected to a normal amplifier or through TV speakers
In the menu, set "DOWNMIX" in "INITIAL SETUP" to "NORMAL."
- To listen to the sound through speakers connected to an amplifier that conforms to Dolby Pro Logic surround
In the menu, set "DOWNMIX" in "INITIAL SETUP" to "SURROUND."
- To listen to the sound through speakers connected to an amplifier with a digital connector or to output the sound to a digital component such as a DAT or MD deck
When you play a DVD, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "PCM" in the menu.
When you play a VIDEO CD, set "VIDEO CD DIGITAL OUT" in "INITIAL SETUP" to "ON" in the menu.
- To connect the player to a digital component with a built-in Dolby Digital decoder
In the menu, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "AC-3 Digital."

"INITIAL SETUP" also includes other items such as "VIDEO ASPECT RATIO" and "OSD LANGUAGE." For details, see page 46.

Basic Operations

Basic Operations

Playing a DVD



- The operating procedure of VIDEO CDs or CDs is different from that of DVDs. For details on playing a VIDEO CD, see pages 18 to 25. For details on playing a CD, see pages 26 to 31.

You can turn on the player using the remote
Press POWER when the indicator above the POWER button on the front panel is lit in red.

- Make settings on your TV.
Turn on the TV and select the video input so that you can view the pictures from this player.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this player.

- Press POWER to turn on the player.
The indicator (red) above the POWER button changes to green and the front panel display lights up.

- Press and place the disc on the disc tray.



With the playback side facing down

- Press .
- The disc tray and front panel close, and the player starts playback (Continuous Play). Adjust the volume on the TV or the amplifier.

To open or close the front panel
Press PANEL UP/DOWN on the player.

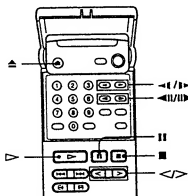
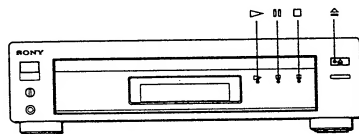
When "RESUME" appears on the front panel display
You can resume playback from the point where you stopped the DVD. For details on playing from the beginning of the disc, see page 36.

Note
You may not be able to do Resume Play depending on the DVD.

If you want to change the playback speed during Slow-motion play
Two speeds are available: SLOW 1 (about 1/15th the normal speed) and SLOW 2 (about 1/30th). Each time you press or , the indication changes as follows:
SLOW 1 \leftrightarrow SLOW 2

Note
Depending on the DVD, you may not do some of the operations described on the right.

To stop playback
Press .

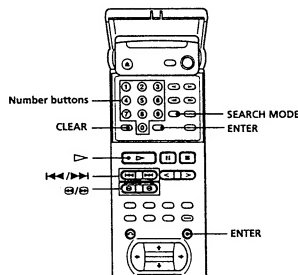
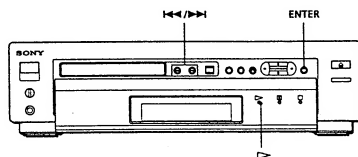


During playback

To	Press
Pause	
Resume play after pause	or
Play frame by frame	or
Play in slow motion	or
Play at twice the normal speed	or
Stop play and remove the disc	

To return to Continuous Play mode
Press .

Locating a title, chapter or point you want



To	Press
Go to the next chapter in Continuous Play mode	▶▶
Go back to the preceding chapter in Continuous Play mode	◀◀
Select the chapter	Number buttons to select the chapter number, then ENTER or ▷.
Select the title	1. SEARCH MODE repeatedly until "TITLE SEARCH" appears on the TV screen. 2. Number buttons to select the title number, then ENTER or ▷.
Locate a point using the time code	1. SEARCH MODE repeatedly until "TIME SEARCH" appears on the TV screen. 2. Number buttons to enter a time code, then ENTER or ▷.
Locate a point while monitoring the picture (Search)	⏮/⏭. You will not hear the sound during this operation. When you find the point you want, press ▷ to return to the normal speed.

What are title and chapter?
See page 5.

If you want to change the search speed
Two speeds are available: FF1 or FR1 (about 10 times the normal speed) and FF2 or FR2 (about 30 times). Each time you press ⏮ or ⏭, the indication changes as follows: FF1 (FR1) ↔ FF2 (FR2)

If you have made a mistake
Press CLEAR, then the correct number button.

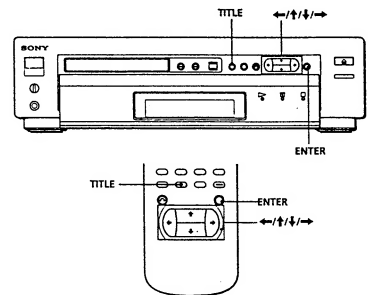
Each time you press SEARCH MODE
"CHAPTER SEARCH," "TITLE SEARCH" and "TIME SEARCH" appear on the TV screen.

Note
Depending on the DVD, you may not do some of the operations described on the right.

Notes
• Depending on the DVD, you may not select the title.
• Depending on the DVD, a "title menu" may be simply called a "menu" or "title" in the instructions supplied with the disc. "Press ENTER." in Step 3 may also be expressed as "Press SELECT."

Using the Title Menu

A DVD is divided into long sections of a picture or a music piece called "titles." When you play the DVD which contains several titles, you can select the title you want using the title menu.



- Press TITLE.
The title menu appears on the TV screen. The contents of the menu varies from disc to disc.

1	TITLE 1
2	TITLE 2
3	TITLE 3
4	TITLE 4

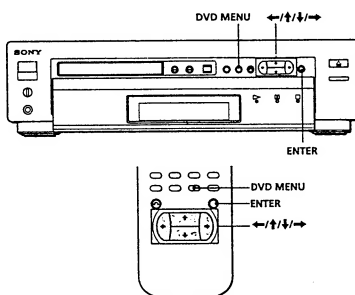
- Press ◀/▶/⏮/⏭ to select the title you want to play.
Depending on the disc, you can use the number buttons to select the title.
- Press ENTER.
The player starts playing the selected title.

If you want to select the language for the DVD menu
Change the setting using "INITIAL SETUP" in the normal menu (see page 47).

Note
Depending on the DVD, a "DVD menu" may be simply called a "menu" in the instructions supplied with the disc. "Press ENTER." in Step 4 may also be expressed as "Press SELECT."

Using the DVD menu

Some DVDs allows you to select the disc contents using the menu. When you play these DVDs, you can select the language for the subtitles, the language for the sound, etc., using the DVD menu.



- Press DVD MENU.
The DVD menu appears on the TV screen. The contents of the menu vary from disc to disc.

• ITEM 1
• ITEM 2
• ITEM 3
• ITEM 4

- Press ◀/▶/⏮/⏭ to select the item you want to change.
Depending on the disc, you can use the number buttons to select the item.
- To change other items, repeat Step 2.
- Press ENTER.

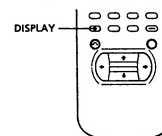
- What is play mode?
See page 44.
- What is angle?
See page 39.
- What are title and chapter?
See page 5.
- What is language for the sound?
See page 37.
- What is language for the sub-titles?
See page 38.

Note
Depending on the DVD, some information may not appear on the TV screen.

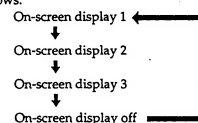
Each time you press TIME, the information changes as shown below.
Playing time of the current chapter
↓
Remaining time of the current chapter
↓
Playing time of the current title
↓
Remaining time of the current title

Using the On-Screen Display

You can check the operating status of the player and the information about the disc using the on-screen display on the TV screen.



Press DISPLAY.
Each time you press the button, the on-screen display changes as follows:



■ Display information of the on-screen display 1 mode
While playing a disc, the current title number, current chapter number and playing time are always displayed.

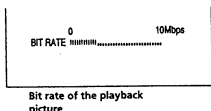
Current title number	Current chapter number	Playing time of the current chapter *
TITLE 3	CHAPTER 1	01:32:19

■ Display information of the on-screen display 2 mode

Current title number/total number of titles	Current play mode	Playing status
DVD TITLE/TOTAL : 001/999 CHAPTER/TOTAL : 001/999 PLAY TIME : 01:32:19 SUB-TITLE/TOTAL : 000/000 AUDIO/TOTAL : 000/000 ANGLE/TOTAL : 000/000 VIDEO CONTROL : SMP200	PLAY	Current chapter number/total number of chapters in the current title Current language for the sub-titles/total number of languages for sub-titles Current audio format
Playing time of the current chapter *	Status of the video control	Selected angle/total number of angles

What is bit rate?
Bit rate refers to the amount of video data per second in a disc. The higher the bit rate is, the larger the amount of data. However, this does not always mean that you can get higher quality pictures.

■ Display information of the on-screen display 3 mode
While playing a disc, the approximate bit rate of the playback picture is always displayed.

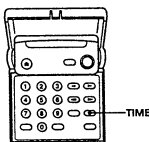


Note
Depending on the DVD, the chapter number or time may not appear.

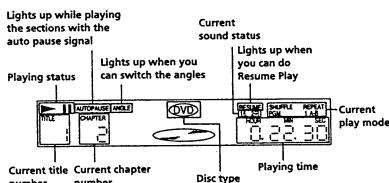
■ Display information of the on-screen display off mode
No information is displayed. (Messages, etc., will be displayed.)

Using the Front Panel Display

You can check the information about the disc, such as the total number of the titles, remaining numbers of the titles and chapters, or remaining time, using the front panel display.

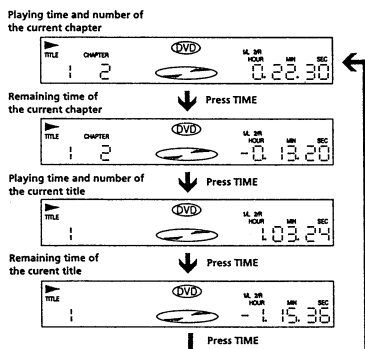


■ Display information while playing the disc

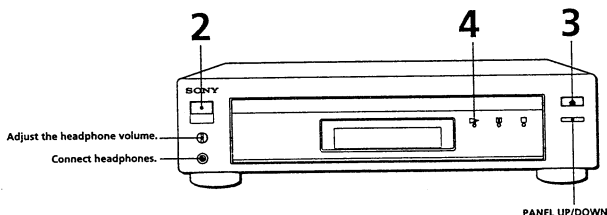


■ Checking the remaining time

Each time you press TIME while playing the disc, the display changes as shown in the chart below. The time information in the on-screen display 1 or 2 mode also changes each time you press TIME.



Playing a VIDEO CD



• The operating procedure of DVDs or CDs is different from that of VIDEO CDs.
For details on playing a DVD, see pages 10 to 17.
For details on playing a CD, see pages 26 to 31.

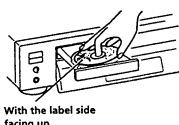
You can turn on the player using the remote
Press POWER when the indicator above the POWER button on the front panel is lit in red.

1 Make settings on your TV.
Turn on the TV and select the video input so that you can view the pictures from this player.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this player.

2 Press POWER to turn on the player.
The indicator (red) above the POWER button changes to green and the front panel display lights up.

3 Press , and place the disc on the disc tray.

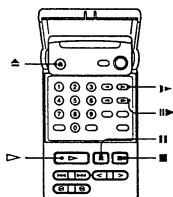
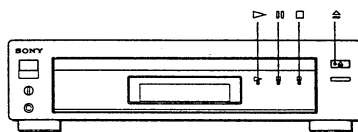


4 Press .
The disc tray and front panel close and the player plays all the tracks once (Continuous Play). Adjust the volume on the TV or the amplifier.

To open or close the front panel
Press PANEL UP/DOWN on the player.

When "RESUME" appears on the front panel display
You can resume playback from the point where you stopped the VIDEO CD. For details on playing from the beginning of the disc, see page 36.

To stop playback
Press .



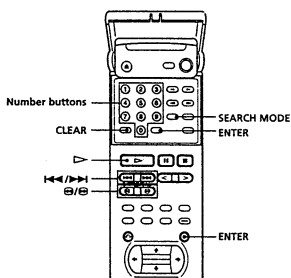
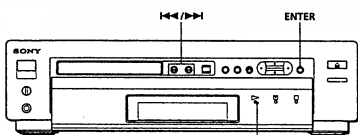
During playback

To	Press
Pause	
Resume play after pause	or
Play frame by frame	
Play in slow motion	
Stop play and remove the disc	

To return to Continuous Play mode
Press .

Refer to the instructions supplied with your disc.

Locating a track or point you want



- What is a track?
See page 5.
- What is an index?
See page 5.
- What is a scene?
See page 5.
- If you want to change the search speed
Two speeds are available: FF1 or FR1 and FF2 or FR2. Each time you press FF1 or FR1 or FF2 or FR2 , the indication changes as follows:
 $\text{FF1 (FR1)} \leftrightarrow \text{FF2 (FR2)}$
- If you have made a mistake
Press CLEAR, then the correct number button.
- Each time you press SEARCH MODE, "TRACK SEARCH," "SCENE SEARCH" and "VIDEO INDEX SEARCH" appear on the TV screen.

Note
Some discs do not allow you to start playing from a particular scene. In this case, if you do Scene Search before you start playing, the player starts playing from scene 1. If you do Scene Search while playing a disc, the player starts playing from the current scene.

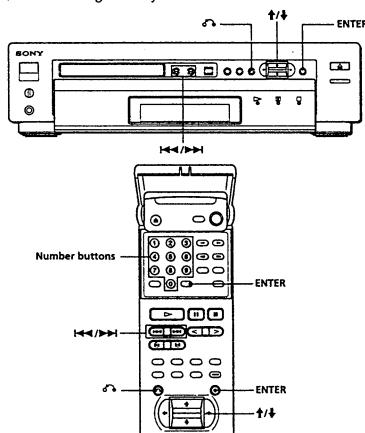
To	Press
Go to the next track in Continuous Play mode	Next Track
Go back to the preceding track in Continuous Play mode	Previous Track
Select the track	Number buttons to select the track number, then ENTER or ENTER .
Select the index in Continuous Play mode	1 SEARCH MODE repeatedly until "VIDEO INDEX SEARCH" appears on the TV screen. 2 Number buttons to select the index number, then ENTER or ENTER .
Select the scene before you start playing a VIDEO CD with PBC functions and during PBC playback (Scene Search)	1 SEARCH MODE repeatedly until "SCENE SEARCH" appears on the TV screen. 2 Number buttons to select the scene number, then ENTER or ENTER . (To check the current scene number, press DISPLAY. The scene number appears at the left top of the TV screen.)
Locate a point while monitoring the picture (Search)	Still . You will not hear the sound during this operation. When you find the point you want, press Play to return to the normal speed.

- When playing VIDEO CDs with PBC functions
PBC playback starts automatically.
- To cancel PBC playback of a VIDEO CD with PBC functions and play the disc in Continuous Play mode
There are two ways.
• Before you start playing, select the track you want using Next Track or Previous Track , then press ENTER or ENTER .
• Before you start playing, select the track number using the number buttons on the remote, then press ENTER or ENTER .
"PLAY WITHOUT PBC" appears on the TV screen and the player starts Continuous Play. You cannot play still pictures such as a menu screen.

When "THIS KEY NOT USABLE NOW. ON MENU DISPLAY, USE NUMBER KEYS TO SELECT." appears on the TV screen
You have pressed an invalid button. You can use the number keys only when the menu screen appears on the TV screen.

Playing VIDEO CDs with PBC Functions (PBC Playback)

When playing VIDEO CDs with PBC functions (Ver. 2.0 discs), you can enjoy simple interactive operations, operations with search functions, etc.
PBC Playback allows you to play VIDEO CDs interactively, following the menu screen on the TV screen.
On this player, you can use the number buttons, ENTER, Next Track , Previous Track , Still , Play and Pause during PBC Playback.



- Start playing a VIDEO CD with PBC functions, following Steps 1 to 4 in "Playing a VIDEO CD" on page 18.
- Select the item number you want.
On the player
Press Play to select the item number.

On the remote
Press the number button of the item you want.

Enter with number keys, then press Play .
[1] AAAA
[2] BBBB
[3] CCCC
[4] DDDD

(Continued)

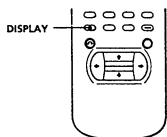
Note
Depending on the VIDEO CD, "Press ENTER." in Step 3 may be expressed as "Press SELECT." in the instructions supplied with the disc.

- Press ENTER.
- Follow the instructions on the menu screen for interactive operations.
Refer to the instructions supplied with the disc, as the operating procedure may differ according to the VIDEO CD.

When	Do the following
Selecting the item	On the player, press Play to select the item number, then press ENTER. On the remote, press the number button of the item you want, then press ENTER.
Going back to the menu screen	Press Next Track , Previous Track , or Play .

Using the On-Screen Display

You can check the operating status of the player and the information about the disc using the on-screen display on the TV screen.

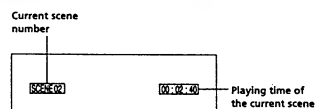


- Press DISPLAY.
Each time you press the button, the on-screen display changes as follows:
- On-screen display 1
 - On-screen display 2
 - On-screen display off

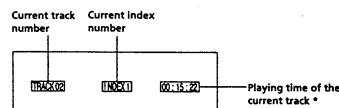
- What is a track?
See page 5.
- What is a scene?
See page 5.
- Each time you press TIME, the information changes as shown below.
Playing time of the current track
Remaining time of the current track
Playing time of the disc
Remaining time of the disc
- While you are doing Shuffle Play or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

Display information of the on-screen display 1 mode

- During PBC playback

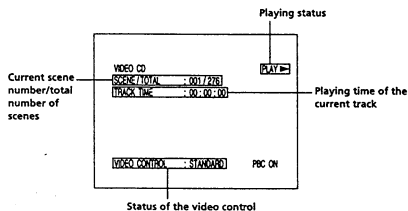


- In Continuous Play mode



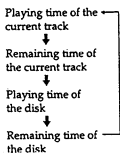
Display information of the on-screen display 2 mode

- During PBC playback



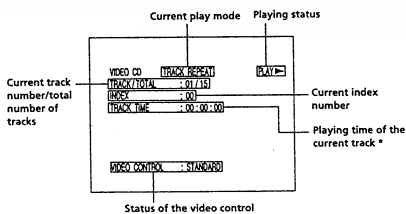
What is play mode?
See page 44.

Each time you press TIME, the information changes as shown below.



While you are doing Shuffle Play or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

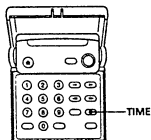
In Continuous Play mode



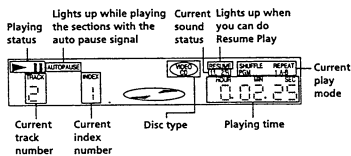
Display information of the on-screen display off mode
No information is displayed. (Messages, etc., will be displayed.)

Using the Front Panel Display

You can check information about the disc, such as the total number of the tracks, remaining number of tracks or remaining time, using the front panel display.



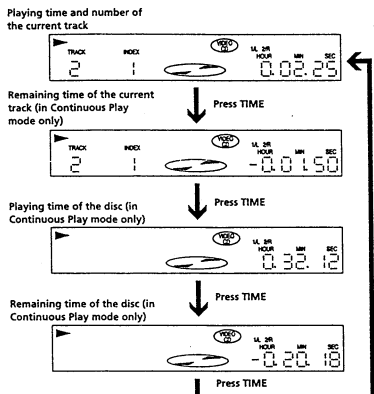
Display information while playing a disc



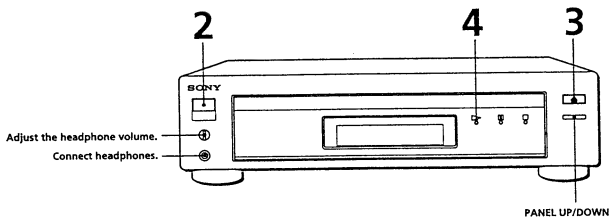
Note
While you are doing Shuffle Play or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

Checking the remaining time

Each time you press TIME while playing a disc, the display changes as shown in the chart below. The time information in the on-screen display 1 or 2 mode also changes each time you press TIME.



Playing a CD



The operating procedure of DVDs or VIDEO CDs is different from that of CDs.
For details on playing a DVD, see pages 10 to 17.
For details on playing a VIDEO CD, see pages 18 to 25.

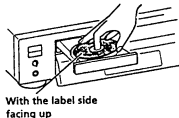
You can turn on the player using the remote.
Press POWER when the indicator above the POWER button on the front panel is lit in red.

1 Make settings on your TV.
Turn on the TV and select the video input so that you can view the pictures from this player.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this player.

2 Press POWER to turn on the player.
The indicator (red) above the POWER button changes to green and the front panel display lights up.

3 Press and place the disc on the disc tray.



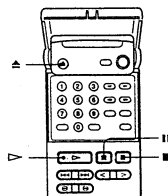
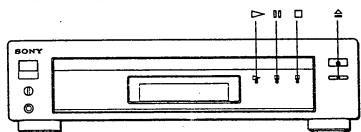
4 Press .

The disc tray and front panel close and the player plays all the tracks once (Continuous Play). Adjust the volume on the amplifier.

To open or close the front panel
Press PANEL UP/DOWN on the player.

When "RESUME" appears in the front panel display
You can resume playback from the point where you stopped the CD. For details on playing from the beginning of the disc, see page 36.

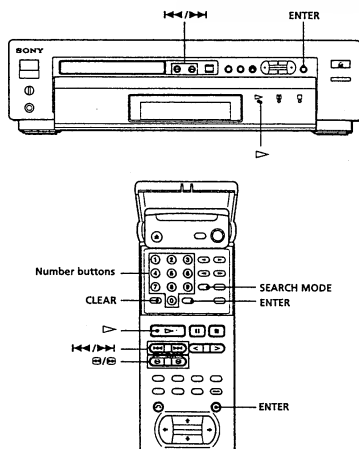
To stop playback
Press .



During playback

To	Press
Pause	
Resume play after pause	or
Stop play and remove the disc	

Locating a track or point you want



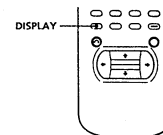
- What is a track?
See page 5.
- What is an index?
See page 5.
- If you want to change the search speed
Each time you press \odot or \ominus , the indication changes as follows:
FF1 (FR1) \leftrightarrow FF2 (FR2)
- If you have made a mistake
Press CLEAR, then the correct number button.
- Each time you press SEARCH MODE
"TRACK SEARCH" and "INDEX SEARCH" appear on the TV screen.

To	Press
Go to the next track in Continuous Play mode	\rightarrow
Go back to the preceding track in Continuous Play mode	\leftarrow
Select the track	Number buttons to select the track number, then ENTER or \triangleright .
Select the index in Continuous Play mode	1. SEARCH MODE repeatedly until "INDEX SEARCH" appears on the TV screen. 2. Number buttons to select the index number, then ENTER or \triangleright .
Locate a point while monitoring the sound (Search)	\odot / \ominus . When you find the point you want, press \triangleright to return to the normal speed.

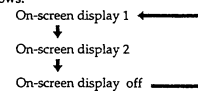
- Each time you press TIME, the information changes as shown below.
- Playing time of the current track
- Remaining time of the current track
- Playing time of the disc
- Remaining time of the disc
- While you are doing Shuffle Play or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

Using the On-Screen Display

You can check the operating status of the player and the information about the disc using the on-screen display on the TV screen.

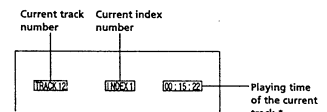


Press DISPLAY.
Each time you press the button, the on-screen display changes as follows:

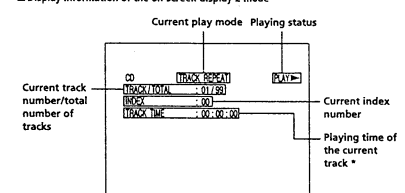


Display information of the on-screen display 1 mode

While playing a disc, the current track number, playing time and index number are always displayed.



Display information of the on-screen display 2 mode

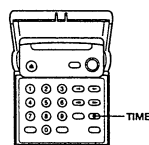


Display information of the on-screen display off mode

No information is displayed. (Messages, etc., will be displayed.)

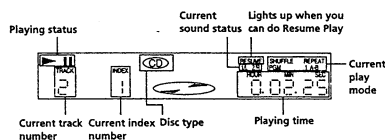
Using the Front Panel Display

You can check information about the disc, such as the total number of the tracks, remaining number of tracks or remaining time, using the front panel display.



Display information while playing a disc

The operating status is displayed for a few seconds only when you change the operating status.

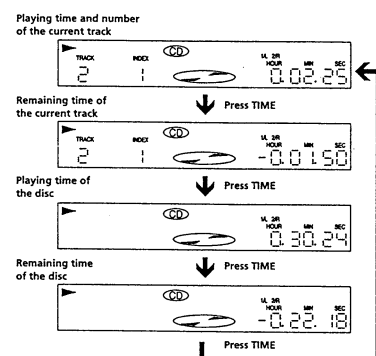


Note

While you are doing Shuffle Play or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

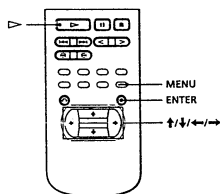
Checking the remaining time

Each time you press TIME while playing a disc, the display changes as shown in the chart below. The time information in the on-screen display 1 or 2 mode also changes each time you press TIME.



Playing Repeatedly (Repeat Play)

You can play all the titles/all the tracks on a disc, a single title/chapter/track or a specific portion repeatedly. To set the Repeat Play, use the menu. For details on using the menu, see page 43.

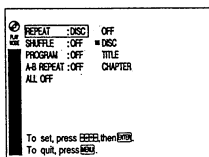


Repeating all the titles or all the tracks on a disc

In Shuffle or Program Play mode, the player repeats the titles or tracks in the shuffled or programmed order.

You cannot do Repeat Play during PBC playback of VIDEO CDs (page 21). You may not be able to do Repeat Play depending on the DVD.

While playing a disc, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "DISC."



"REPEAT" appears on the front panel display. The player repeats the titles/chapters/tracks as follows:

When the disc is played in	The player repeats
Continuous Play (page 10, 18 or 26)	All the tracks (For the DVD, all the chapters in the current title)
Shuffle Play (page 34)	All the titles or tracks in random order
Program Play (page 34)	The same program

To cancel repeating all the titles or all the tracks on a disc Press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "OFF" (page 44).

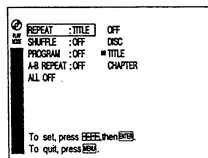
Repeating the current title or chapter

You can repeat only the current title or chapter in Continuous Play mode. You may not be able to do Repeat Play depending on the DVD.

■ Repeating the current title

While the title you want is being played, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "TITLE."

"REPEAT 1" appears on the front panel display and the player repeats the current title.



■ Repeating the current chapter

While the chapter you want is being played, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "CHAPTER."

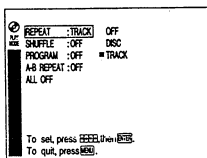
"REPEAT 1" appears on the front panel display and the player repeats the current chapter.

To cancel repeating the current title or chapter Press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "OFF" (page 44).

Repeating the current track

You can repeat only the current track in Continuous Play mode.

While the track you want is being played, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "TRACK."



"REPEAT 1" appears on the front panel display and the player repeats the current title.

To cancel repeating the current track Press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "OFF" (page 44).

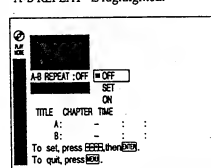
Repeating a specific portion (A→B Repeat)



You can play a specific portion of a title/chapter/track repeatedly. This is useful when you want to memorize lyrics.

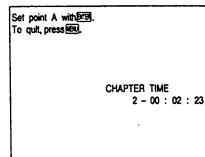
During PBC Playback of VIDEO CDs (page 21), this function is available only while playing moving pictures.

You may not be able to do Repeat Play depending on the DVD.

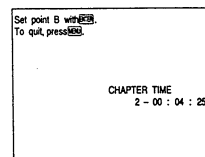
- While playing a disc, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "A-B REPEAT."



- Select "SET" using  and press . The on-screen display for setting the point A appears indicating the current chapter or track number and playing time.




- When you find the starting point (point A) of the portion to be played repeatedly, press ENTER. The chapter or track number and playing time for the point A appear, and the display for setting the point B appears.



- When you reach the ending point (point B), press ENTER. "REPEAT A-B" appears on the front panel display. The player starts repeating this specific portion.

To cancel A→B Repeat Press MENU to display the menu on the TV screen. Then set "A-B REPEAT" in "PLAY MODE" to "OFF" (page 44).

To cancel setting halfway Press MENU.

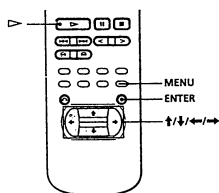
The setting for A→B Repeat remains after it is canceled. When you select "ON" using  in Step 2 and press ENTER, you can play the same portion again.

- Notes
- When you remove the disc, the setting for A→B Repeat is canceled.
 - When you turn the power off, the setting for A→B Repeat is canceled.
 - When you set the A→B Repeat, the settings for Shuffle Play and Program Play are canceled.

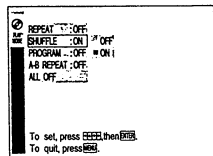
Playing in Random Order (Shuffle Play)


  

You can have the player "shuffle" titles, chapters or tracks and play them in a random order. To set the Shuffle Play, use the menu. For details on using the menu, see page 43.



- Press MENU to display the menu on the TV screen. Then set "SHUFFLE" in "PLAY MODE" to "ON."



- Press . (During playback, the player starts Shuffle Play when you follow the step 1.)

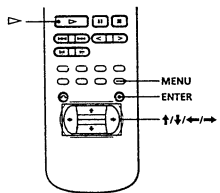
To cancel Shuffle Play Press MENU to display the menu on the TV screen. Then set "SHUFFLE" in "PLAY MODE" to "OFF."

- Notes
- When you disconnect the AC power cord from the AC outlet, Shuffle Play is canceled.
 - You may not be able to do Shuffle Play depending on the DVD.

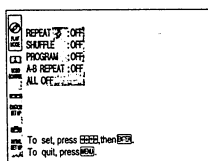
Creating Your Own Program (Program Play)



  

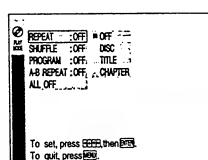
You can arrange the order of the titles, chapters or tracks on the disc and create your own program. The program can contain up to 99 titles, chapters and tracks.





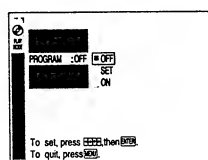
- Press MENU to display the menu on the TV screen.





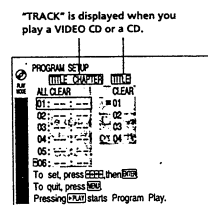
- Select "PLAY MODE" using  and press . "PLAY MODE" is highlighted.




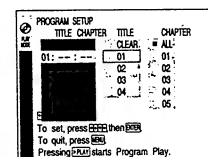
- Select "PROGRAM" using  and press . "PROGRAM" is highlighted.




- Select "SET" using  and press . The programming display appears.

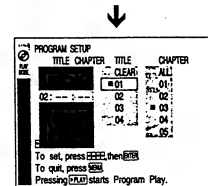
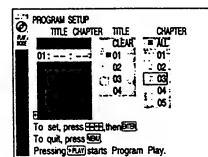


- Press . "01" is highlighted.

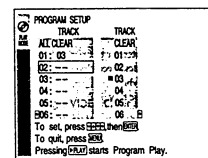


- Select the title, chapter or track you want to program using  and press ENTER. (You can also use the number buttons and ENTER button to select.)

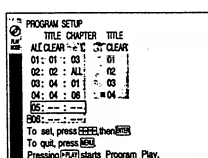
■ When playing a DVD When both titles and chapters are recorded on the disc, select the title, then the chapter.



■ When playing a VIDEO CD or CD Select the track you want to program.



- To program other titles, chapters or tracks, repeat Step 6. The programmed titles, chapters or tracks are displayed from 02 in order.



8 Press \square to start Program Play.

To cancel Program Play
Press MENU to display the menu on the TV screen. Then set "PROGRAM" in "PLAY MODE" to "OFF."

To cancel programming
Press MENU.

To change programming
1 In Step 5, select the program number of the title, chapter or track you want to change using \uparrow/\downarrow .
2 Follow Step 6 for new programming.

To cancel all the titles, chapters or tracks in the programmed order, select "ALL CLEAR" in Step 5.
To cancel a title, chapter or track programmed, select the title, chapter or track you want to clear in Step 5, then select "CLEAR" in Step 6.

The program remains even after the Program Play ends
When you press \square , you can play the same program again.

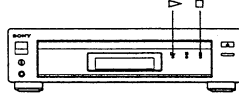
You can do Repeat Play or Shuffle Play of the programmed titles, chapters or tracks
After programming, set "REPEAT" to "DISC" or "SHUFFLE" to "ON" in the menu.

- Notes
- The number of titles, chapters or tracks displayed are that of the titles, chapters or tracks recorded on a disc.
 - The program is canceled when:
 - you open or close the disc tray
 - you turn the power off
 - You may not be able to do Program Play depending on the DVD.

Resuming Playback from the Point Where You Stopped a Disc (Resume Play)

DVD VIDEO CD

The player stores the point where you stopped a disc if "RESUME" appears on the front panel display. In this case, you can resume playback from that point. As long as you do not remove the disc, Resume Play is available even if you turn the power off.



- While playing a disc, press \square to stop playback. "RESUME" appears in the front panel display and "DISC RESTARTS FROM POINT YOU STOPPED." appears on the TV screen. If "RESUME" does not appear, Resume Play is not available.
- Press \square .
The player starts playback from the point you stopped the disc in Step 1.

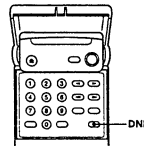
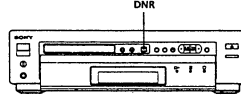
To play from the beginning of the disc
When "RESUME" appears on the front panel display before you start playing, press \square to turn off "RESUME," then press \square .

- Notes
- You cannot do Resume Play depending on the DVD.
 - Resume Play is not available in Shuffle or Program Play mode.
 - Depending on where you stopped the disc, the player may resume playback from a different point.
 - The point where you stopped playing is cleared when:
 - you open or close the disc tray
 - you disconnect the AC power cord
 - you change the play mode
 - you start playback after selecting a title, chapter or track
 - you change the setting of "VIDEO ASPECT RATIO," "DVD MENU LANGUAGE" or "PARENTAL CONTROL" in "INITIAL SETUP" in the menu

Reducing the Picture Noise (DNR: Digital Video Noise Reduction)

DVD VIDEO CD

You can make the picture clearer by reducing the picture noise.



Press DNR.
Each time you press the button, the value for DNR changes as follows:
OFF \rightarrow 1 \rightarrow 2 \rightarrow 3

As the value increases, the picture noise will be reduced. However, afterimages may increase.

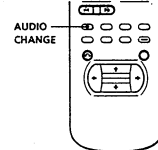
- Notes
- Depending on the disc, the effect may be difficult to tell.
 - The setting for DNR returns to OFF when:
 - you turn the power off
 - you open or close the disc tray

Changing the Sound

DVD VIDEO CD

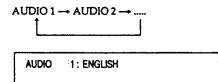
With DVDs on which multilingual sound is recorded, you can select the language you want while playing the DVD.

With multiplex VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. In this case, the sound loses the stereo effect.



Press AUDIO CHANGE while playing a disc.
Each time you press the button, the indication and the language/sound from the speakers change as follows:

■ When playing a DVD



■ When playing a VIDEO CD or a CD

Press	Indication	You will hear
Once	1/L	The sound of the left channel
Twice	2/R	The sound of the right channel
Three times	1/L 2/R	The standard stereo sound

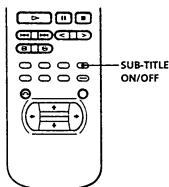
You can also use the menu to switch the sound for the VIDEO CD or the CD.
Press MENU to display the menu. Then select "L/R/STEREO" in "CUSTOM SETUP" to change the sound (page 46). However, this setting does not affect the output from the DIGITAL OUT connectors when you play a CD.

- Notes
- Depending on the DVD, you may not be able to change the languages even if multilingual sound is recorded on the DVD.
 - When you turn off the player, the standard stereo playback will be resumed.

Turning the Sub-titles On and Off

DVD

With DVDs on which sub-titles are recorded, you can turn the sub-titles on and off whenever you want while playing the DVD.



Press SUB-TITLE ON/OFF while playing a DVD.
Sub-titles appear on the TV screen.

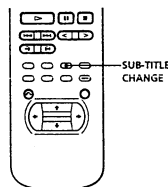
To turn off the sub-titles
Press SUB-TITLE ON/OFF again.

- Notes
- When playing the DVD on which no sub-titles are recorded, no sub-titles appear even if you press SUB-TITLE ON/OFF.
 - Depending on the DVD, you may not be able to turn the sub-titles on even if they are recorded on the DVD.
 - Depending on the DVD, you may not be able to turn the sub-titles off.

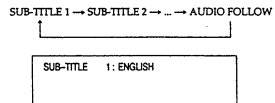
Changing the Sub-titles

DVD

With DVDs on which multilingual sub-titles are recorded, you can change the sub-titles whenever you want while playing the DVD.
When sub-titles are turned off, press SUB-TITLE ON/OFF to turn on the sub-titles.



While playing a DVD, press SUB-TITLE CHANGE repeatedly until the sub-titles you want appear on the TV screen.



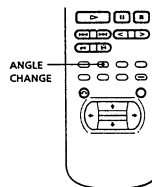
- When you select "AUDIO FOLLOW," the language for the sub-titles change according to the language for the sound.

- Notes
- The type and number of languages for sub-titles vary from disc to disc.
 - Depending on the DVD, you may not be able to change the sub-titles even if multilingual subtitles are recorded on the DVD.
 - Depending on the DVD, you may not use the audio follow function even if "AUDIO FOLLOW" is displayed.

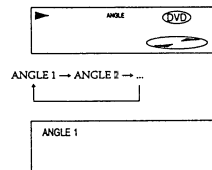
Changing the Angles

DVD

With DVDs on which various angles (multi-angles) for a scene are recorded, you can change the angles whenever you want while playing the DVD.



When "ANGLE" appears on the front panel display while playing a DVD, press ANGLE CHANGE repeatedly until you get the angle you want.



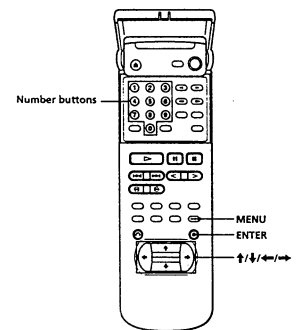
You can specify the angle beforehand
Specify the angle when "ANGLE" is not displayed on the front panel display. When a scene on which multi-angles are recorded comes, the angle is automatically selected.

- Notes
- The number of angles varies from disc to disc or from scene to scene. The number of angles that can be changed on a scene is that of angles recorded for that scene.
 - Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

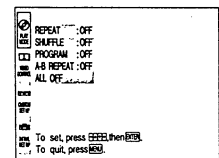
Limiting Playback by Children (Parental Control)

DVD

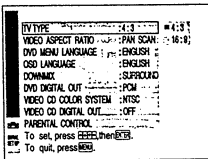
Playing some DVDs can be limited depending on the age of users. The "Parental Control" function allows you to set a playback limitation level.



- Press MENU to display the menu on the TV screen before playing.

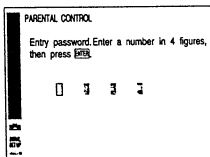


- 2 Select "INITIAL SETUP" using \uparrow/\downarrow , then press \rightarrow .
"INITIAL SETUP" is highlighted.

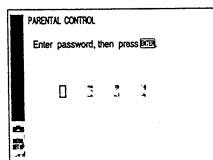


- 3 Select "PARENTAL CONTROL" using \uparrow/\downarrow , then press ENTER.

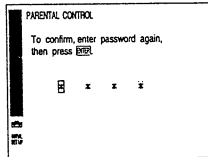
■ When you have not entered a password yet
The display for entering a password appears.



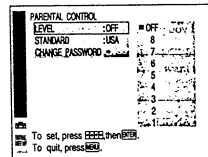
■ When you have already entered a password
The display for confirming the password appears.
Step 4.



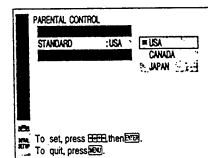
- 4 Enter a password in 4 figures using the number buttons, then press ENTER.
The figures change to asterisks (*), and the display for confirming the password appears.



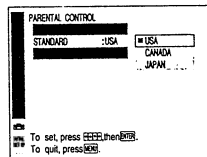
- 5 To confirm your password, enter it using the number buttons, then press ENTER.
The display for setting the playback limitation level and changing the password appears.



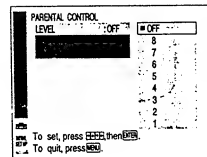
- 6 Select "STANDARD" using \uparrow/\downarrow , then press \rightarrow .



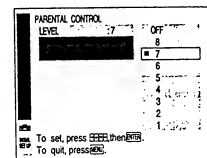
- 7 Select a country as the standard for playback limitation level using \uparrow/\downarrow , then press \rightarrow .
A check mark (■) appears on the left of the selected country.



- 8 Select "LEVEL" using \uparrow/\downarrow , then press \rightarrow .



- 9 Select the level you want using \uparrow/\downarrow , then press ENTER.
A check mark (■) appears on the left of the selected level.



The lower the level is, the more strict the limitation.

To return to the normal screen
Press MENU.

To turn off the Parental Control function and play the DVD after entering your password
Set "LEVEL" to "OFF" in Step 9, then press \rightarrow .

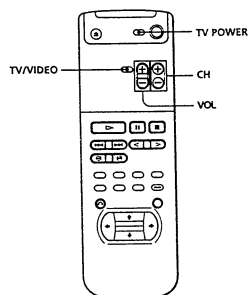
- To change the password
1 In Step 5, select "CHANGE PASSWORD" using \uparrow/\downarrow , then press \rightarrow or ENTER.
The display for changing the password appears.
2 Follow Steps 4 and 5 to enter a new password.

■ If you have forgot your password
Enter "199703" in Step 4 to clear the current password.
To enter a new password, follow the procedure from Step 1 again.

- Notes
- When you play DVDs without the Parental Control function, playback cannot be limited on this player.
 - When you do not set a password, you cannot change the settings for playback limitation.
 - Depending on the DVD, you may be asked to change the parental control level while playing the disc. In this case, enter the password, then change the level. When you stop playing the DVD, the level returns to the original level.
 - When you disconnect the AC power cord, all the settings for the Parental Control function return to default settings.

Controlling the TV with the Supplied Remote

You can control Sony TVs with the ■ mark using the supplied remote.



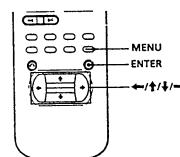
By pressing	You can
TV POWER	Turn on or off the TV
TV/VIDEO	Select the input source for the TV
VOL	Adjust the volume of the TV
CH	Change the channel of the TV

Using the Menu

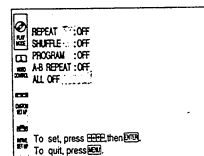
Using the menu allows initial setup, selecting the play mode, adjusting the picture and sound quality, setting the various outputs, etc. You can also set a language for the sub-titles and menu display, playback limitation children, etc.

For details on each menu item, see pages 44 to 47.

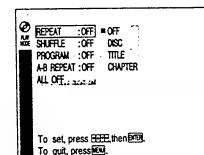
In the menu, select the item or setting from left to right. Use \rightarrow to go to the right item or setting. Use \leftarrow to go back to the left item or setting.



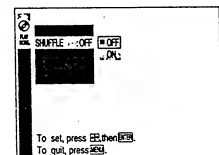
- 1 Press MENU to display the menu on the TV screen.



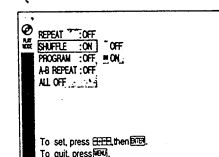
- 2 Select the main item you want using \uparrow/\downarrow , and then press \rightarrow or ENTER.
The selected main item is highlighted.



- 3 Select the item you want using \uparrow/\downarrow , then press \rightarrow or ENTER.

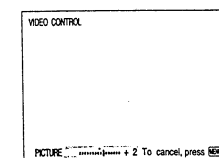


- 4 Select the setting you want using \uparrow/\downarrow , then press ENTER.
A check mark (■) appears on the left of the selected setting.



When \rightarrow appears on the right of "ADJUST"
1 Select "ADJUST", then press \rightarrow or ENTER.
The display for adjustment appears.

- 2 Adjust the value using \leftarrow/\rightarrow , then press ENTER.



When \rightarrow appears on the right of the setting
More settings to be selected are on the right. Press \rightarrow to select.

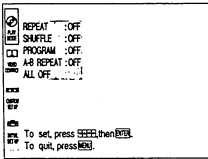
To cancel using the menu
Press MENU.

Note
Some menu items require operations other than selecting the setting. For details on these items, see the relevant pages.

Settings for Playback (PLAY MODE)

"PLAY MODE" allows you to set various playback modes as described on pages 32 to 36. Default settings are underlined.

Note
Depending on the disc, you may not be able to set playback modes.



REPEAT (page 32)

Selects the setting of Repeat Play.

- **QFE:** does not play repeatedly.
- **DISC:** repeats all the titles/all the chapters/all the tracks on a disc.
- **TITLE (DVD only):** repeats the current title.
- **CHAPTER (DVD only):** repeats the current chapter.
- **TRACK (VIDEO CD/CD only):** repeats the current track.

SHUFFLE (page 34)

Selects the setting of Shuffle Play.

- **QFE:** does not play a disc in random order.
- **ON:** has the player "shuffle" titles or tracks and play in a random order.

PROGRAM (page 34)

Selects the setting of Program Play.

- **QFE:** The order of the titles, chapters or tracks on the disc cannot be arranged.
- **SET:** arranges the order of the titles, chapters or tracks on the disc.
- **ON:** plays the titles, chapters or tracks in the programmed order.

A-B REPEAT (page 33)

Selects the setting of A—B Repeat.

- **QFE:** does not play a specific portion of a title/chapter/track repeatedly.
- **ON:** plays a specific portion of a title/chapter/track repeatedly.

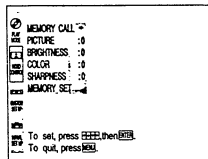
ALL OFF

Turns off all the settings in "PLAY MODE." Select this item in Continuous Play mode.

You can do Repeat Play or Shuffle Play in the programmed order.
When "PROGRAM" is set to "ON," set "REPEAT" to "DISC" or "SHUFFLE" to "ON."

Adjustments for Playback Picture (VIDEO CONTROL)

"VIDEO CONTROL" allows you to adjust the video output of the DVD or VIDEO CD from the player, not from the TV, to obtain the picture quality you want. When you select "ADJUST" in a menu item, adjust the value using \leftarrow/\rightarrow , then press ENTER. Default adjustments are underlined.



MEMORY CALL

At factory setting, typical adjustments are saved in memory. To adjust the picture using these adjustments, select this menu item to call any one of the sets.

When you change the settings of the menu items in "VIDEO CONTROL," you can save up to 3 sets of your own adjustments in memory ("MEMORY SET").

CALL

- 1: to view the picture with the best possible sharpness and contrast in a well-lit room
- 2: to view the quiet picture in a dark room
- 3: to make adjustments to obtain the picture you want. (All the setting values are 0.)
- STANDARD:** All the setting values are 0.

PICTURE

Adjusts the picture contrast. The higher the value is, the stronger the contrast.

- **ADJUST** \leftarrow -5 ~ 0 ~ 5: adjusts the value for the picture contrast.
- **QRESET:** resets the value to "0."

BRIGHTNESS

Adjusts the picture brightness. The higher the value is, the brighter the picture.

- **ADJUST** \leftarrow -5 ~ 0 ~ 5: adjusts the value for the picture brightness.
- **QRESET:** resets the value to "0."

COLOR

Adjusts the picture color intensity. The higher the value is, the stronger the intensity.

- **ADJUST** \leftarrow -5 ~ 0 ~ 5: adjusts the value for the picture color intensity.
- **QRESET:** resets the value to "0."

SHARPNESS

Adjusts the picture sharpness. The higher the value is, the sharper the picture.

- **ADJUST** \leftarrow -5 ~ 0 ~ 5: adjusts the value for the picture sharpness.
- **QRESET:** resets the value to "0."

MEMORY SET

Saves up to 3 sets of your own adjustments of "VIDEO CONTROL" in memory.

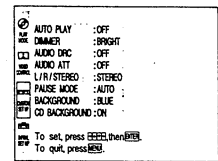
- **RESET:** resets all the sets of the adjustments saved in memory to the factory setting.
- **1:** saves the current set of your own adjustments in memory "1."
- **2:** saves the current set of your own adjustments in memory "2."
- **3:** saves the current set of your own adjustments in memory "3."

Note

Depending on the DVD or VIDEO CD, the effects of the adjustments may be difficult to see.

Settings for Display and Sound (CUSTOM SETUP)

"CUSTOM SETUP" allows you to set the display and sound according to the playback conditions. Default settings are underlined.



AUTO PLAY

Selects the setting of Auto Play when you connect the AC power cord to the AC outlet.

- **QFE:** does not start playing a disc automatically.
- **TIMER:** starts playing a disc automatically when you connect the AC power cord to the AC outlet. By connecting a timer (not supplied), you can start playing at any time you want.
- **DEMO1:** starts playing the demonstration 1 automatically.
- **DEMO2:** starts playing the demonstration 2 automatically.

DIMMER

Adjusts the lighting of the front panel display.

- **BRIGHT:** makes the front panel display bright.
- **DARK:** makes the front panel display dark.
- **OFF:** turns off the lighting of the front panel display.

AUDIO DRC (Dynamic Range Control)

Controls the audio dynamic range when you play a DVD. This functions only when "DVD DIGITAL OUT" in "INITIAL SETUP" is set to "PCM." (page 47)

- **QFE:** Normally select this position.
- **ON:** makes the sound clear with the volume turned down at night, etc.

Note

Depending on the DVD, there may be no effect on the sound.

AUDIO ATT (attenuation)

Selects the setting of the output from the LINE OUT (AUDIO 1, 2) connectors according to audio equipment to be connected.

- **QFE:** turns off the audio attenuation.
- **ON:** adjusts the audio output level so that no sound distortion occurs.

Note

The setting does not affect the output from the DIGITAL OUT connectors.

L/R STEREO

Selects the setting of the sound of the VIDEO CD from the LINE OUT (AUDIO 1, 2) and DIGITAL OUT connectors or the sound of the CD from the LINE OUT (AUDIO 1, 2) connectors.

- **STEREO:** outputs the standard stereo sound.
- **L:** outputs the sound from the left channel.
- **R:** outputs the sound from the right channel.

Note

The setting does not affect the sound from the DIGITAL OUT connectors when you play a CD.

PAUSE MODE

Selects the picture in pause mode.

- **AUTO:** A picture including subjects that move dynamically is output with no blur. Normally select this position.
- **FRAME:** A picture including subjects do not move dynamically is output with high resolution.

Note

The setting does not affect the picture when the auto pause functions while playing the DVD or VIDEO CD.

BACKGROUND

Selects the background color of the TV screen in stop mode.

- **BLUE:** The background color is blue.
- **BLACK:** The background color is black.

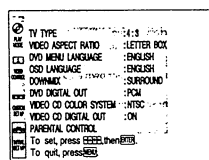
CD BACKGROUND

Turns on and off the background picture on the TV screen when you play a CD.

- **ON:** turns on the background graphic picture.
- **OFF:** turns off the background graphic picture.

Basic Settings (INITIAL SETUP)

"INITIAL SETUP" allows necessary setup when you install the player and connect external components to the player. The setups for advanced playback of DVDs or VIDEO CDs are also available in this main menu. Default settings are underlined.



TV TYPE

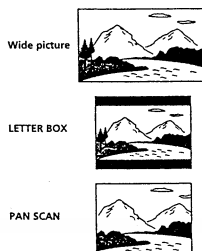
Selects the aspect ratio of the TV to be connected.

- **4:3:** when you connect a normal TV to the player
- **16:9:** when you connect a wide-screen TV to the player

VIDEO ASPECT RATIO

Selects the aspect ratio of the screen when you play a wide picture recorded on a DVD on the normal TV.

- **LETTER BOX:** displays the wide picture with bands displayed on the upper and lower portions of the screen.
- **PAN SCAN:** displays the wide picture on the whole screen with a portion automatically cut off.



Note

Depending on the DVD, the aspect ratio of the playback picture may be fixed.

DVD MENU LANGUAGE

Switches the languages for the DVD menu.

- **ENGLISH**
 - **JAPANESE**
 - **CHINESE**
 - **SPANISH**
 - **FRENCH**
 - **ITALIAN**
 - **GERMAN**
 - **PORTUGUESE**
 - **DUTCH**
 - **OTHERS** \rightarrow
- When you select "OTHERS," select and enter the language code from the list using the number buttons (page 55).

Note

When you select the language that is not recorded on the DVD, any one of the recorded languages is automatically selected.

OSD (On-Screen Display) LANGUAGE

Switch the language for the on-screen display.

- **ENGLISH**
- **FRENCH**

DOWNMIX

Switches the mixing down methods when you play a disc on which the sound in Dolby Digital (AC-3) format is recorded.

- **SURROUND:** when the player is connected to an audio component that conforms to Dolby surround, Dolby Pro Logic surround, etc.
- **NORMAL:** when the player is connected to a normal audio component

The setting affects the analog output from the LINE OUT (AUDIO 1, 2) connectors and digital output from the DIGITAL OUT OPTICAL and COAXIAL connectors when "DVD DIGITAL OUT" is set to "PCM."

DVD DIGITAL OUT

Switches the outputting methods of audio signals from the DIGITAL OUT OPTICAL and COAXIAL connectors on the rear panel of the player.

- **PCM:** when the player is connected to an audio component without a built-in Dolby Digital (AC-3) decoder
- **AC-3 Digital:** when the player is connected to audio component with a built-in Dolby Digital (AC-3) decoder

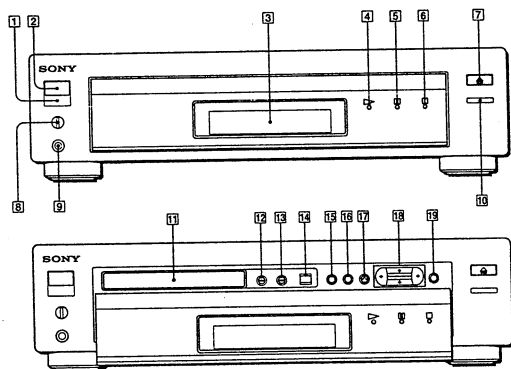
Note

Select the setting correctly. Otherwise, no sound will come out from the speakers or strange sound will come out from the speakers, affecting your ears or causing the speakers to be damaged.

Index to Parts and Controls

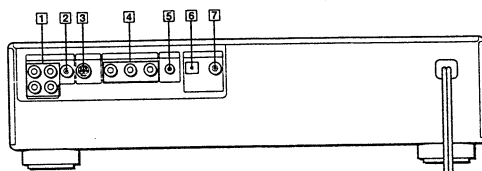
Refer to the pages indicated in parentheses for details.

Front Panel



- 1 ■ (remote sensor) (6)
Accepts the remote control signals.
- 2 POWER switch and indicator (10, 18, 26)
Turns on and off the power of the player.
- 3 Front Panel Display (16, 24, 30)
Indicates the playing time, etc.
- 4 ▷PLAY button (10, 18, 26)
Plays a disc.
- 5 ■PAUSE button (11, 19, 27)
Pauses playing a disc.
- 6 □STOP button (11, 19, 27, 36)
Stops playing a disc.
- 7 ▲OPEN/CLOSE button (11, 19, 27)
Opens or closes the disc tray.
- 8 PHONE LEVEL control (10, 18, 26)
Adjusts the headphone volume.
- 9 PHONES connector (10, 18, 26)
Connect the headphones to this connector.
- 10 PANEL UP/DOWN button (10, 18, 26)
Moves the front panel up and down.
- 11 Disc tray (10, 18, 26)
Place a disc on the tray.
- 12 ◀◀PREV button (12, 20, 28)
Press to go back to the preceding chapter or track.
- 13 ▶▶NEXT button (12, 20, 28)
Press to go to the next chapter or track.
- 14 DNR button (37)
Reduces the picture noise.
- 15 TITLE button (13)
Displays the title menu on the TV screen.
- 16 DVD MENU button (14)
Displays the DVD menu on the TV screen.
- 17 ↶RETURN button (21)
Press to return to the preceding selection screen, etc.
- 18 ◀◀/▶▶ buttons
Selects the items or settings.
- 19 ENTER button
Executes the items or settings.

Rear Panel



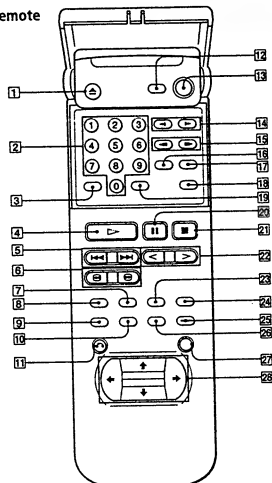
- 1 LINE OUT (AUDIO 1, 2) connector (7)
Connects to the audio input connector on the TV or amplifier.
- 2 LINE OUT (VIDEO) connector (7)
Connects to the video input connector on the TV or monitor.
- 3 S VIDEO OUT connector (7)
Connects to the S video input connector on the TV or VCR.
- 4 COMPONENT VIDEO OUT connectors (7)
Connects to the monitor or projector with component video input connectors (Y, B-Y, R-Y) that conform to output signals from the player.
- 5 S-LINK connector (9)
Connects to the S-link connector on an external component.
- 6 DIGITAL OUT (OPTICAL) connector (8)
Connects to an audio component using the optical cable.
- 7 DIGITAL OUT (COAXIAL) connector (8)
Connects to an audio component using the coaxial cable.

52^{EN}

Additional Information

Additional Information

Remote



- 1 ▲OPEN/CLOSE button (11, 19, 27)
Opens or closes the disc tray.
- 2 Number buttons (12, 20, 28)
Selects the items or settings.
- 3 CLEAR button (12, 20, 28)
Cancels the number selected with the number buttons.
- 4 ▷PLAY button (10, 18, 26)
Plays a disc.
- 5 ◀◀/▶▶PREV/NEXT buttons (12, 20, 28)
Press to go to the next chapter or track or to go back to the preceding chapter or track.
- 6 @/BSCAN buttons (12, 20, 28)
Locates a point while monitoring the picture or sound.
- 7 ANGLE CHANGE button (39)
Changes the angles when playing a DVD.
- 8 AUDIO CHANGE button (37)
Changes the sound while playing a DVD or VIDEO CD.
- 9 DISPLAY button (15, 22, 29)
Displays the current playing status on the TV screen.
- 10 TITLE button (13)
Displays the title menu on the TV screen.
- 11 ↶RETURN button (21)
Press to return to the preceding selection screen while playing a VIDEO CD with PBC functions.
- 12 TV POWER button (42)
Turns the TV power on and off.
- 13 POWER button (10, 18, 26)
Turns on and off the power of the player.
- 14 ◀1/2▶ SLOW buttons (11, 19)
Plays a disc in slow motion.
- 15 ◀1/2▶STEP buttons (11, 19)
Plays a disc frame by frame.
- 16 SEARCH MODE button (12, 20, 28)
Press to select the unit for search (track, index, etc.)
- 17 TIME button (16, 24, 30)
Displays the playing time of the disc, etc. on the front panel display.
- 18 DNR button (37)
Reduces the picture noise.
- 19 ENTER button (13)
Executes the items or settings.
- 20 ■PAUSE button (11, 19, 27)
Pauses playing a disc.
- 21 ■STOP button (11, 19, 27)
Stops playing a disc.
- 22 ◀◀/▶▶ buttons (11)
Plays a disc at about twice the normal speed.
- 23 SUB-TITLE CHANGE button (38)
Changes the sub-titles when playing a DVD.
- 24 SUB-TITLE ON/OFF button (38)
Turns the sub-titles on and off when playing a DVD.
- 25 MENU button (43)
Displays the menu on the TV screen to set or adjust the menu items.
- 26 DVD MENU button (14)
Displays the DVD menu on the TV screen.
- 27 ENTER button (13)
Executes the items or settings.
- 28 ◀◀/▶▶ buttons (13)
Selects the items or settings.
- 29 TV operation buttons (42)
Controls Sony TVs.

Language Code List for the DVD Menu

For details, see page 47.

The language spellings conform to the ISO 639: 1988 (E/F) standard. (December 1996)

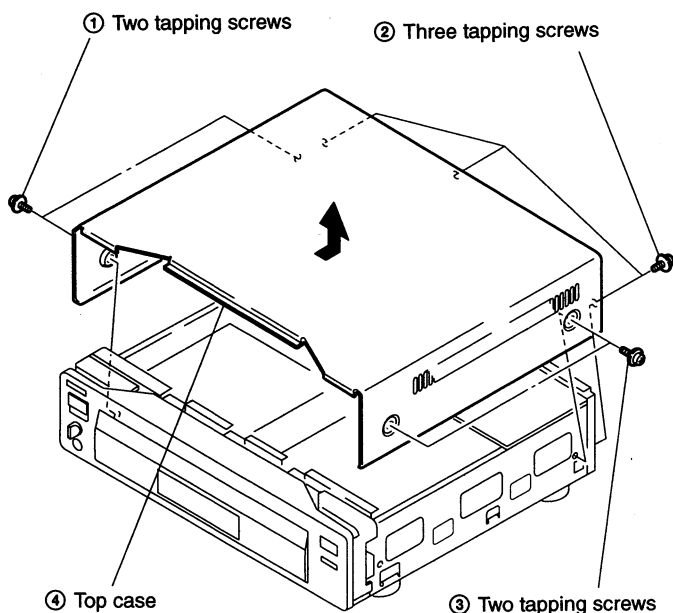
Code	Language	Code	Language	Code	Language	Code	Language
1027	Afar	1186	Scots Gaelic	1350	Malayalam	1513	Siswati
1028	Abkhazian	1194	Galician	1352	Mongolian	1514	Sesotho
1032	Afrikaans	1196	Guarani	1353	Moldavian	1515	Sundanese
1039	Amharic	1203	Gujarati	1356	Marathi	1516	Swedish
1044	Arabic	1209	Hausa	1357	Malay	1517	Swahili
1045	Assamese	1217	Hindi	1358	Maltese	1521	Tamil
1051	Aymara	1226	Croatian	1363	Burmese	1525	Telugu
1052	Azerbaijani	1229	Hungarian	1365	Nauru	1527	Tajik
1053	Bashkir	1233	Armenian	1369	Nepali	1528	Thai
1057	Byelorussian	1235	Interlingua	1376	Dutch	1529	Tigrinya
1059	Bulgarian	1239	Interlingue	1379	Norwegian	1531	Turkmen
1060	Bihari	1245	Inupiak	1393	Occitan	1532	Tagalog
1061	Bislama	1248	Indonesian	1403	(Afan) Oromo	1534	Setswana
1066	Bengali; Bangla	1253	Icelandic	1408	Oriya	1535	Tonga
1067	Tibetan	1254	Italian	1417	Punjabi	1538	Turkish
1070	Breton	1257	Hebrew	1428	Polish	1539	Tsonga
1079	Catalan	1261	Japanese	1435	Pashto; Pushto	1540	Tatar
1093	Corsican	1269	Yiddish	1436	Portuguese	1543	Twí
1097	Czech	1283	Javanese	1463	Quechua	1557	Ukrainian
1103	Welsh	1287	Georgian	1481	Rhaeto-Romanic	1564	Urdu
1105	Danish	1297	Kazakh	1482	Kirundi	1572	Uzbek
1109	German	1298	Greenlandic	1483	Romanian	1581	Vietnamese
1130	Bhutani	1299	Cambodian	1489	Russian	1587	Volapük
1142	Greek	1300	Kannada	1491	Kinyarwanda	1613	Wolof
1144	English	1301	Korean	1495	Sanskrit	1632	Xhosa
1145	Esperanto	1305	Kashmiri	1498	Sindhi	1665	Yoruba
1149	Spanish	1307	Kurdish	1501	Sangho	1684	Chinese
1150	Estonian	1311	Kirghiz	1502	Serbo-Croatian	1697	Zulu
1151	Basque	1313	Latin	1503	Singhalese	1703	Not specified
1157	Persian	1326	Lingala	1505	Slovak		
1165	Finnish	1327	Laotian	1506	Slovenian		
1166	Fiji	1332	Lithuanian	1507	Samoa		
1171	Faroese	1334	Latvian; Lettish	1508	Shona		
1174	French	1345	Malagasy	1509	Somali		
1181	Frisian	1347	Maori	1511	Albanian		
1183	Irish	1349	Macedonian	1512	Serbian		

54^{EN}

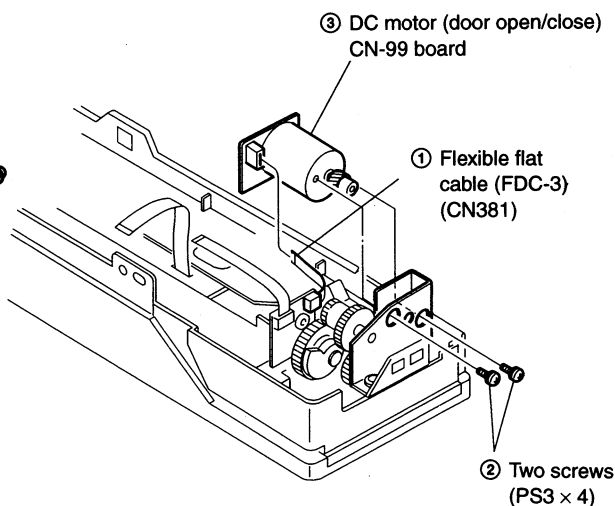
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

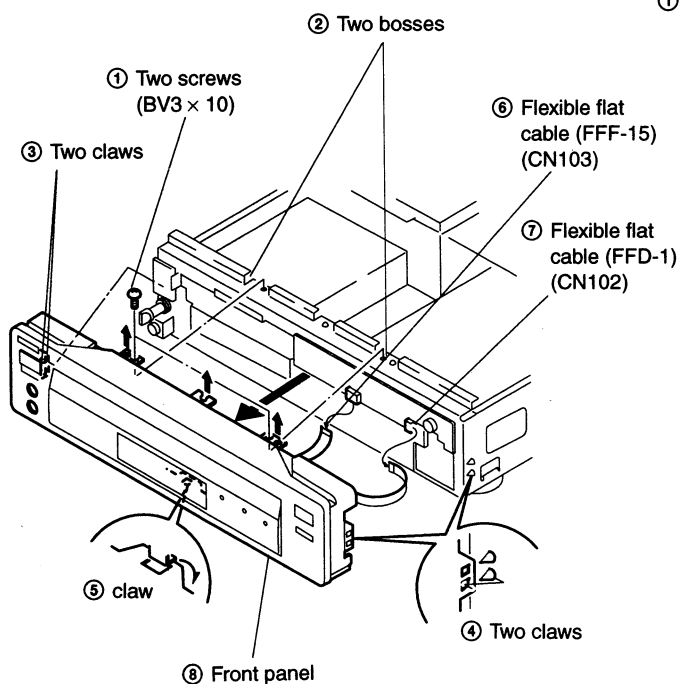
2-1. TOP CASE REMOVAL



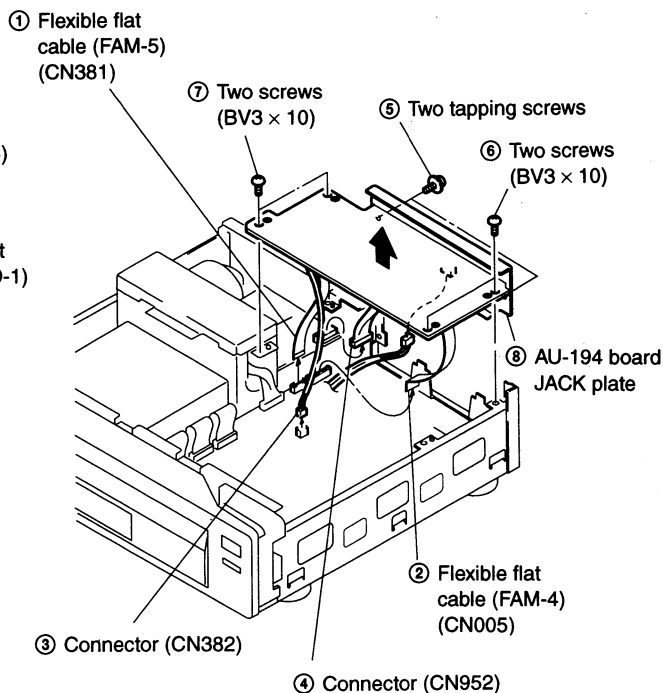
2-3. DC MOTOR (DOOR OPEN/CLOSE) REMOVAL



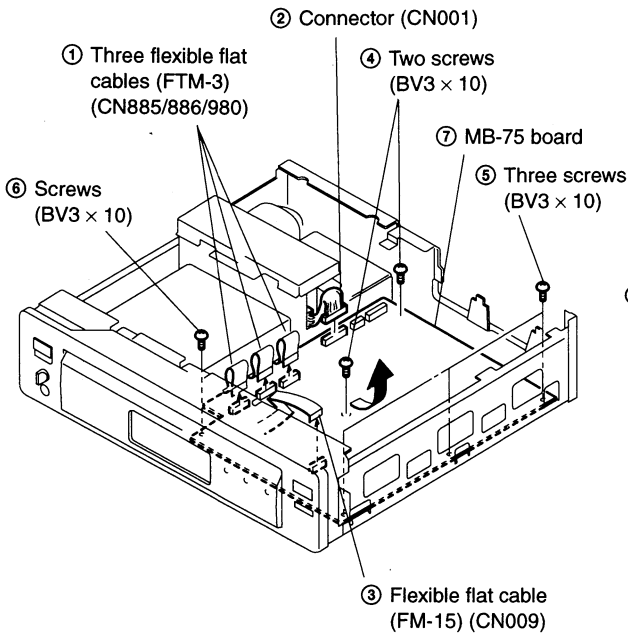
2-2. FRONT PANEL REMOVAL



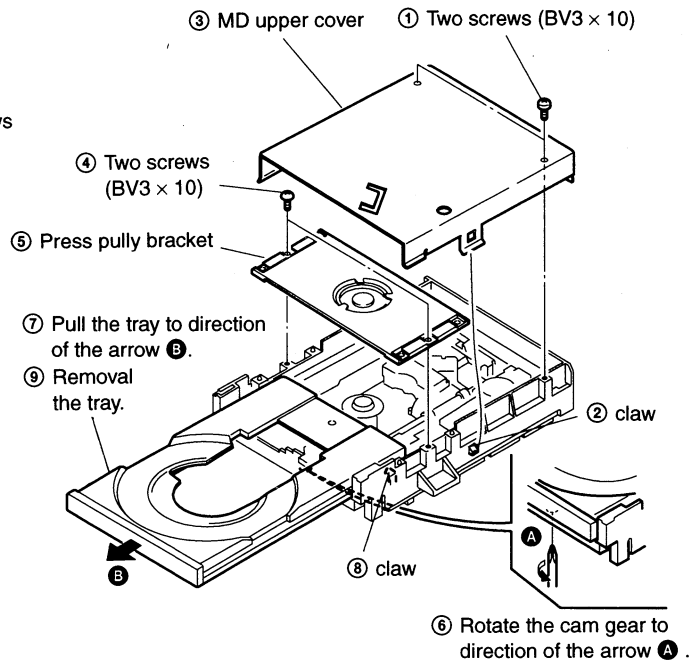
2-4. AU-194 BOARD REMOVAL



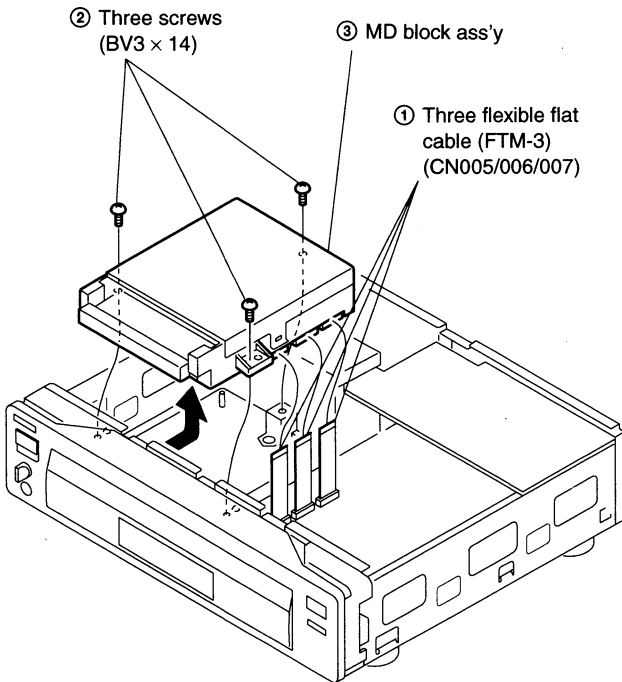
2-5. MB-75 BOARD REMOVAL



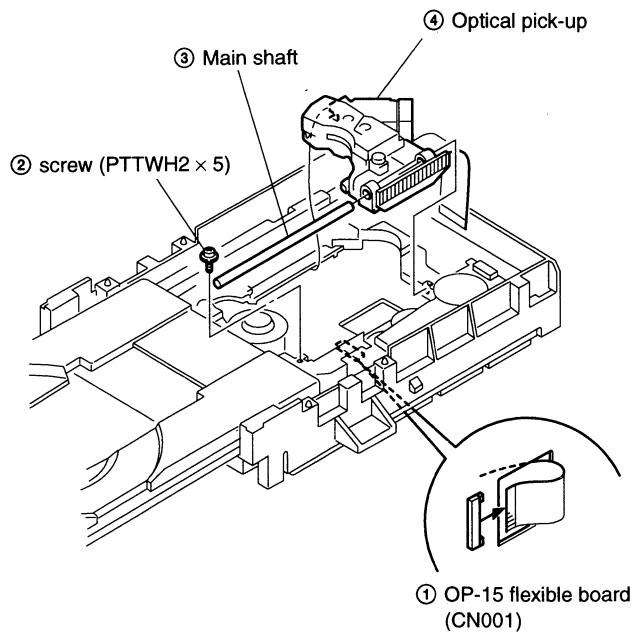
2-7. TRY REMOVAL



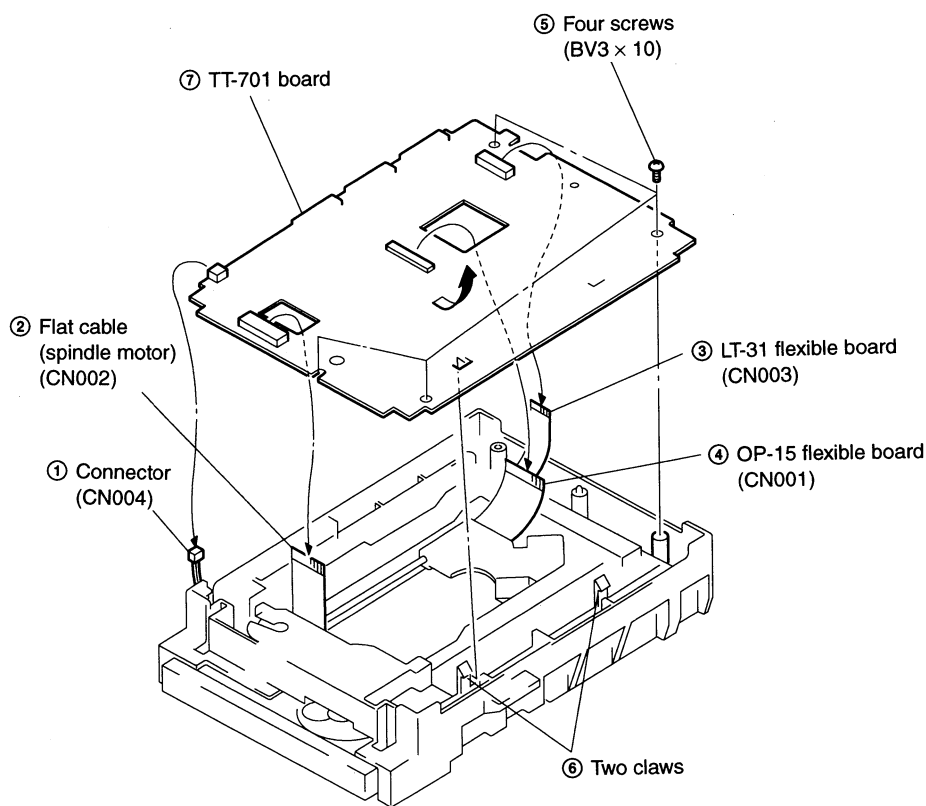
2-6. MD BLOCK ASS'Y REMOVAL



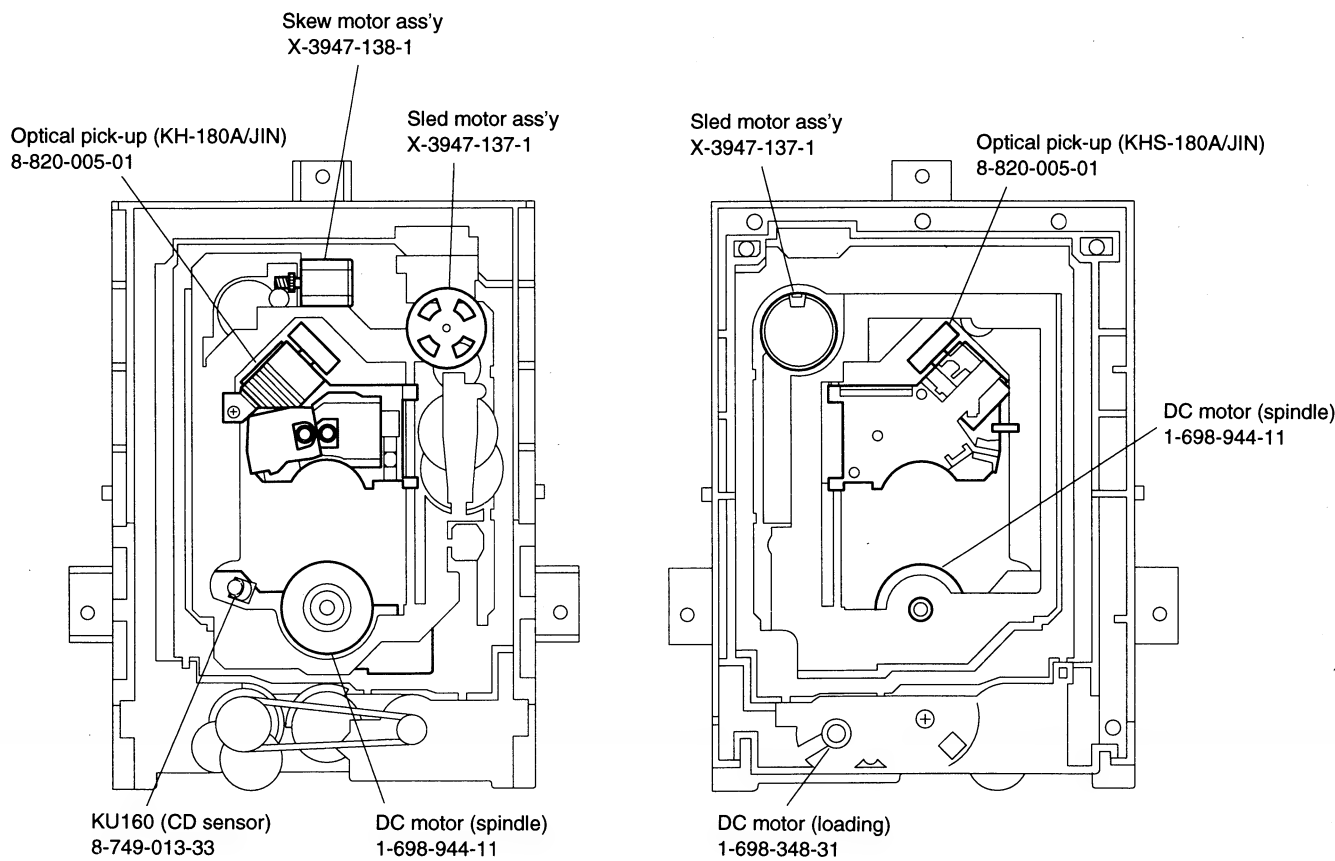
2-8. OPTICAL PICK-UP REMOVAL



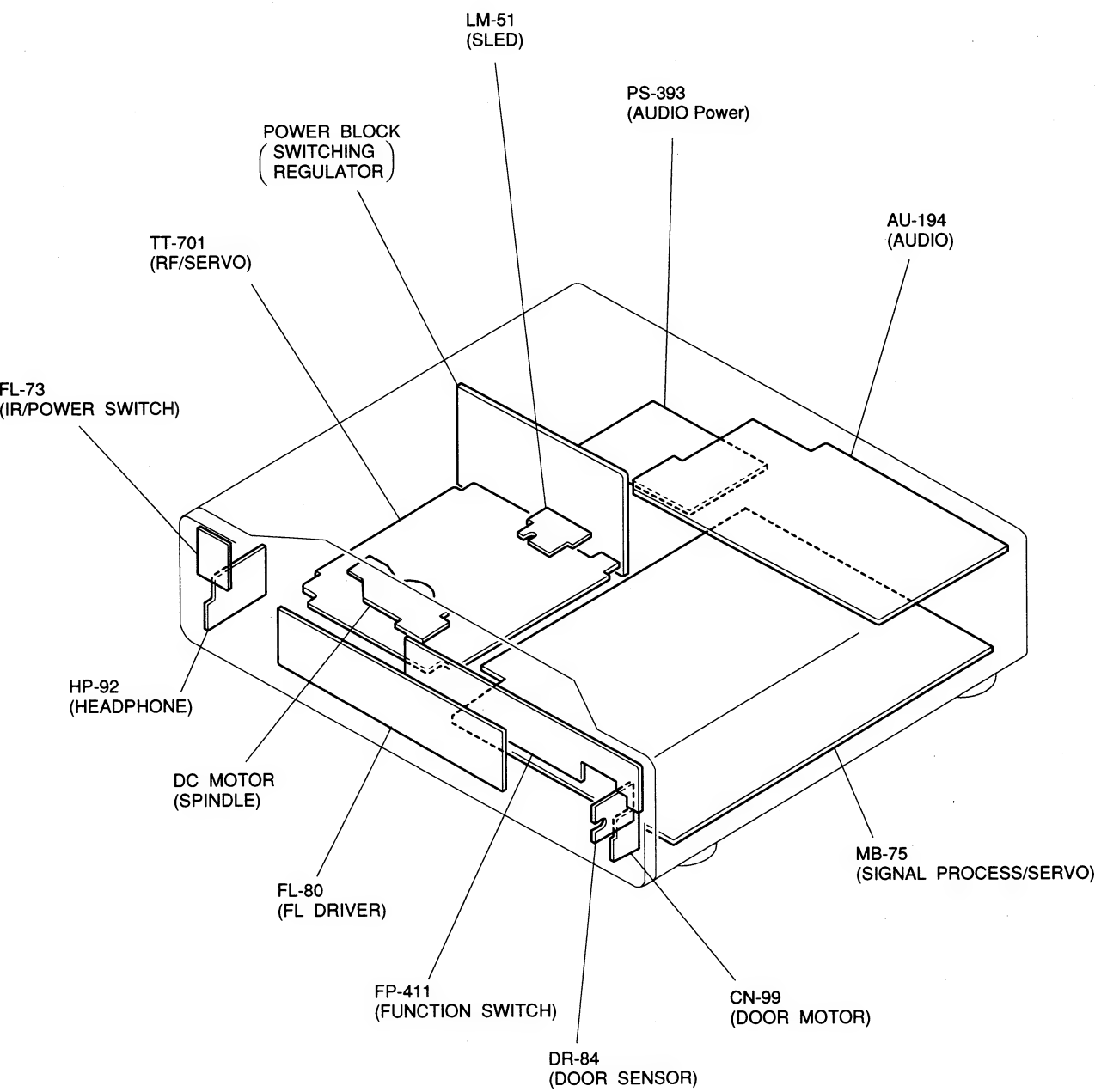
2-9. TT-701 BOARD REMOVAL



2-10. INTERNAL VIEWS

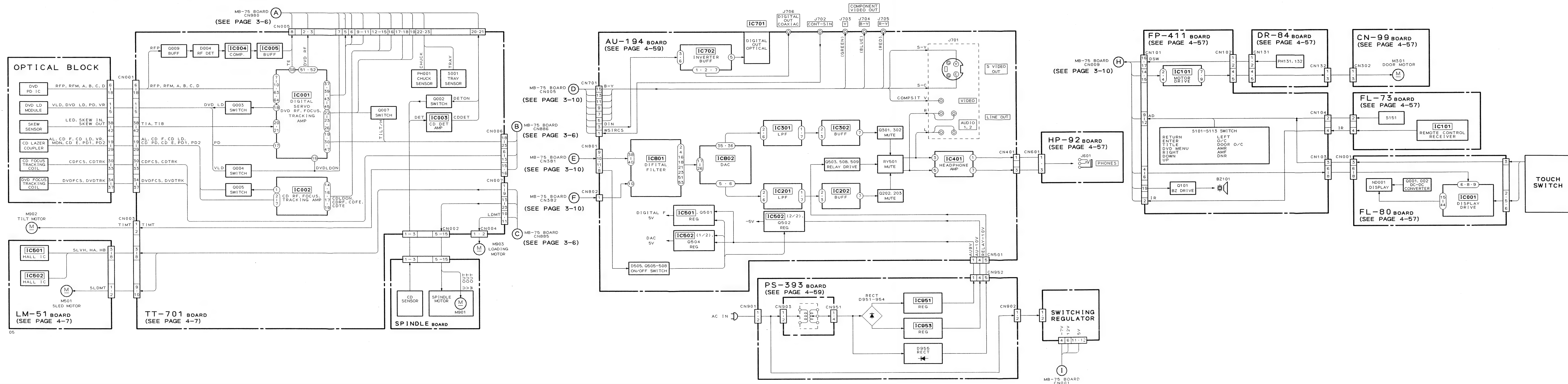


2-11. CIRCUIT BOARD LOCATION

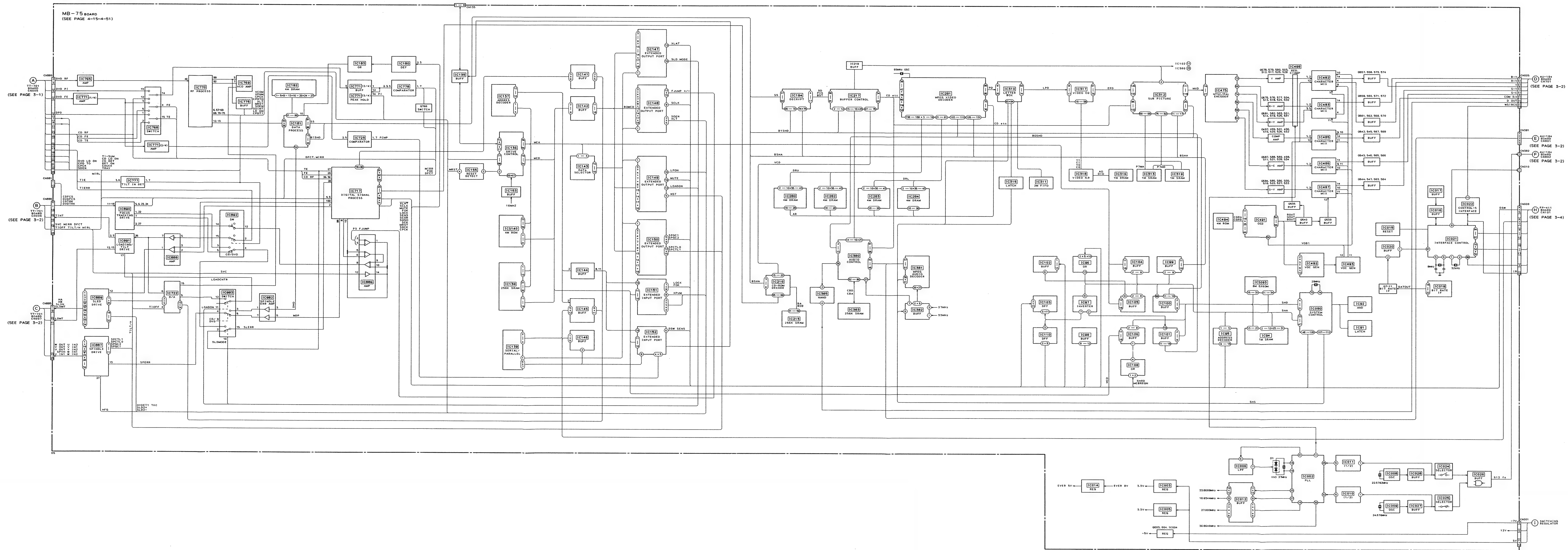


SECTION 3 BLOCK DIAGRAMS

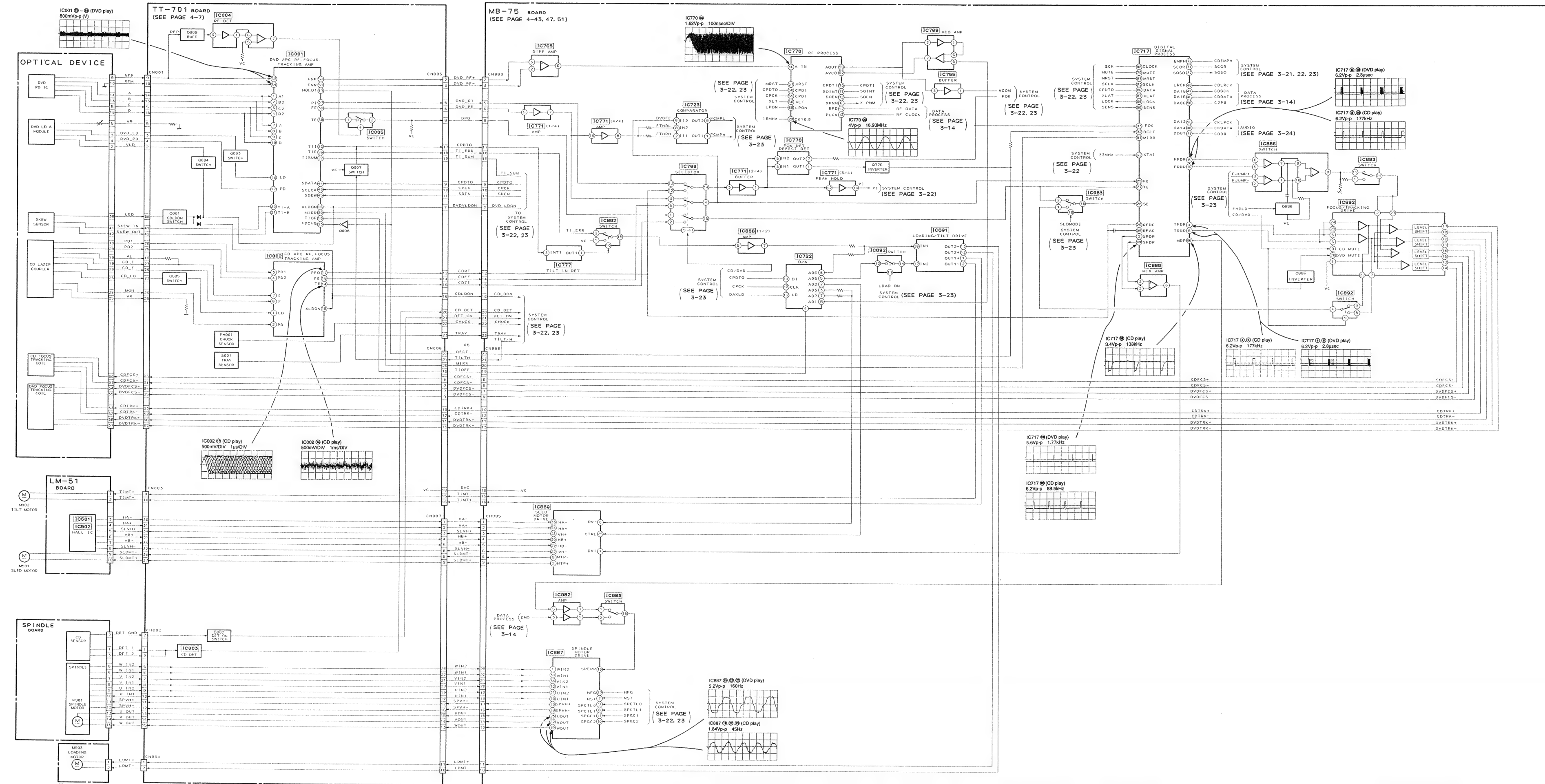
3-1. OVERALL BLOCK DIAGRAM 1 (RF, SERVO, AUDIO POWER BLOCK)



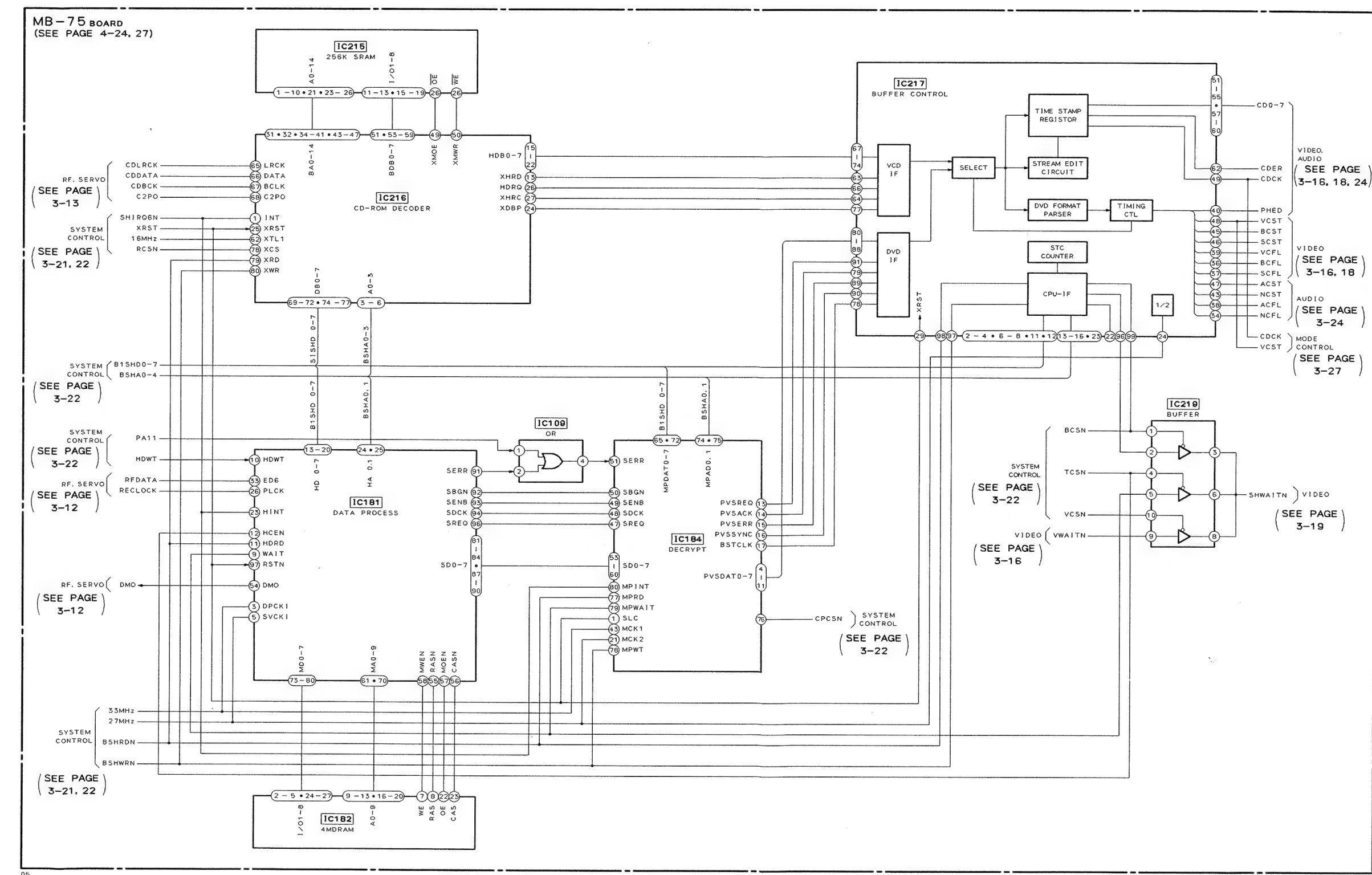
3-2. OVERALL BLOCK DIAGRAM 2 (SIGNAL PROCESS)



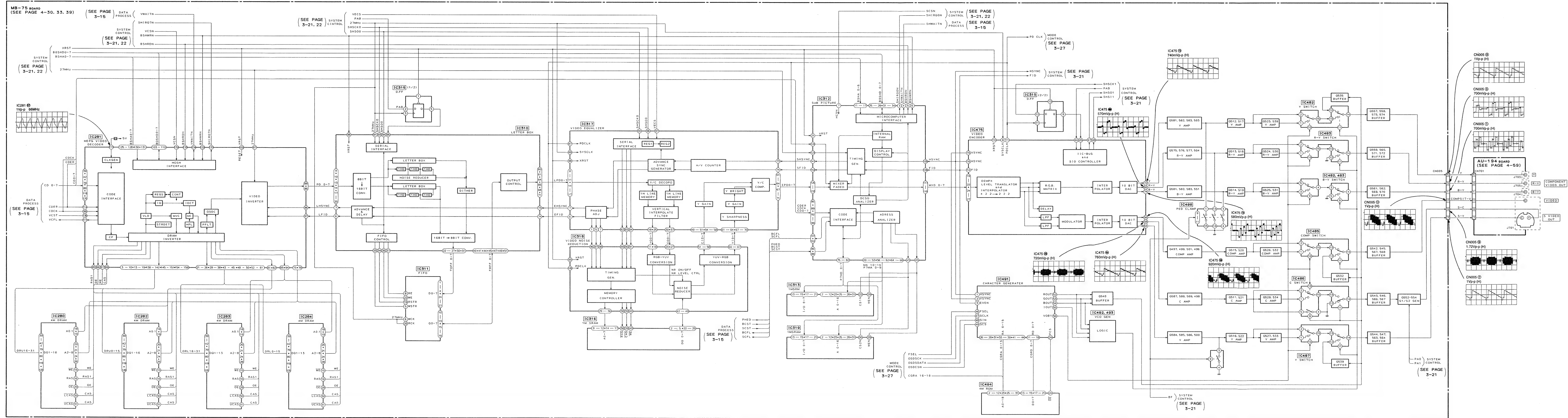
3-3. RF/SERVO BLOCK DIAGRAM

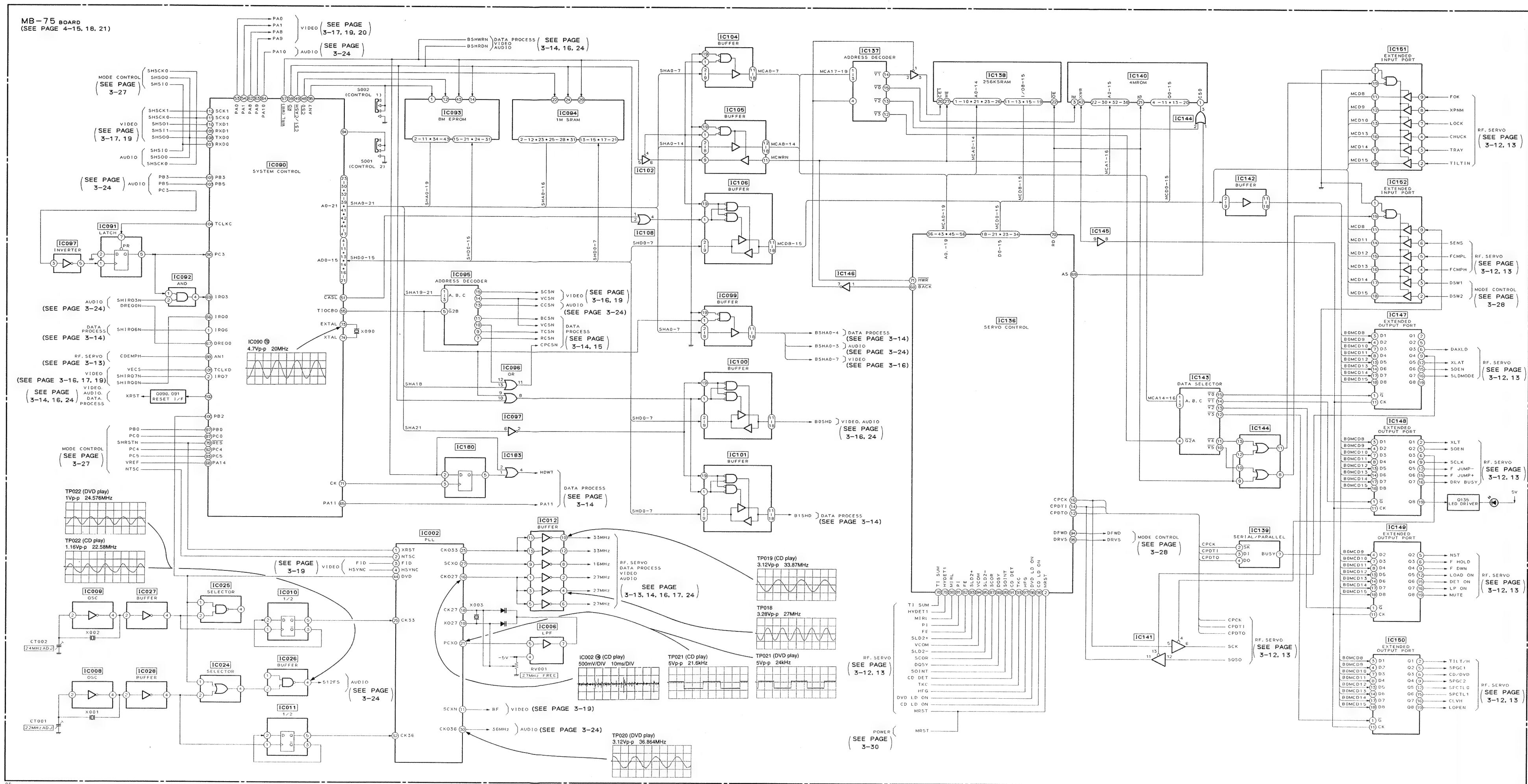


3-4. DATA PROCESS BLOCK DIAGRAM

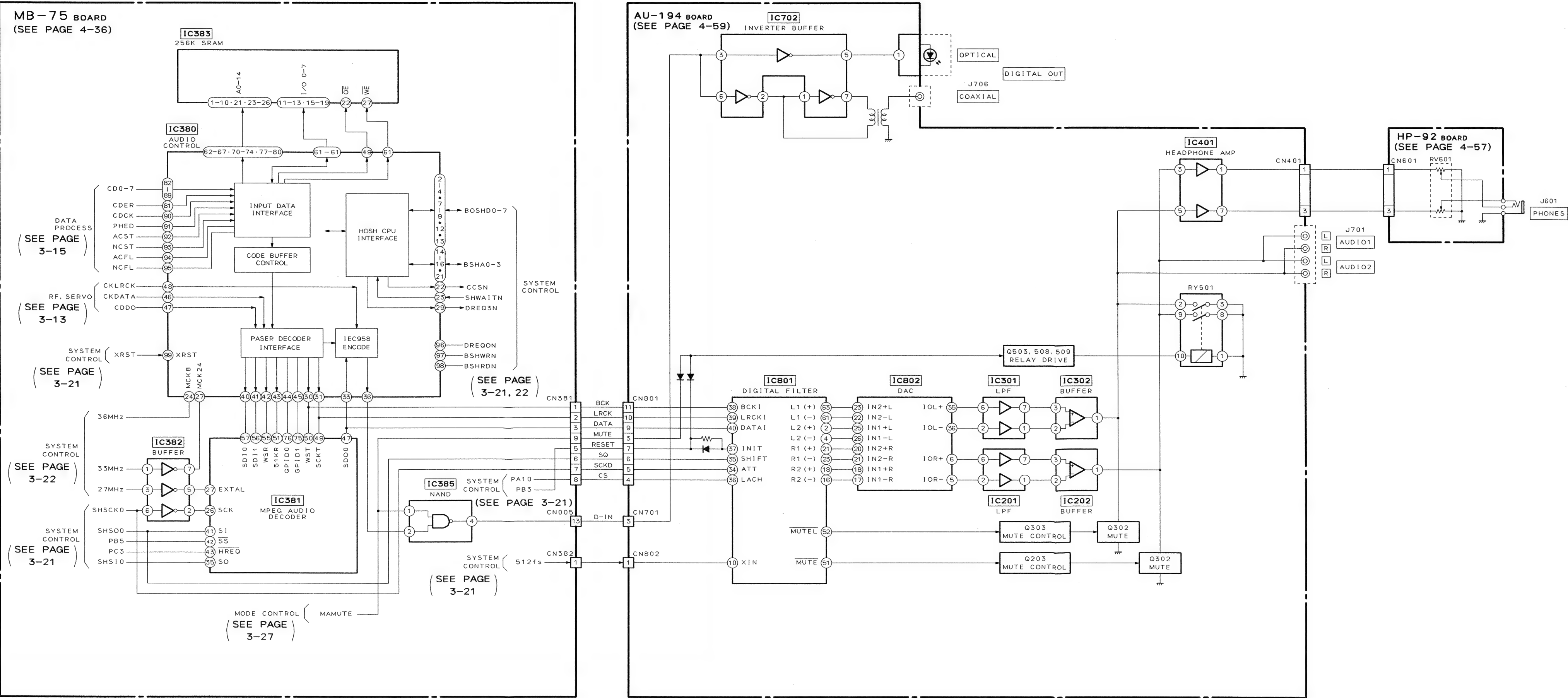


3-5. VIDEO BLOCK DIAGRAM

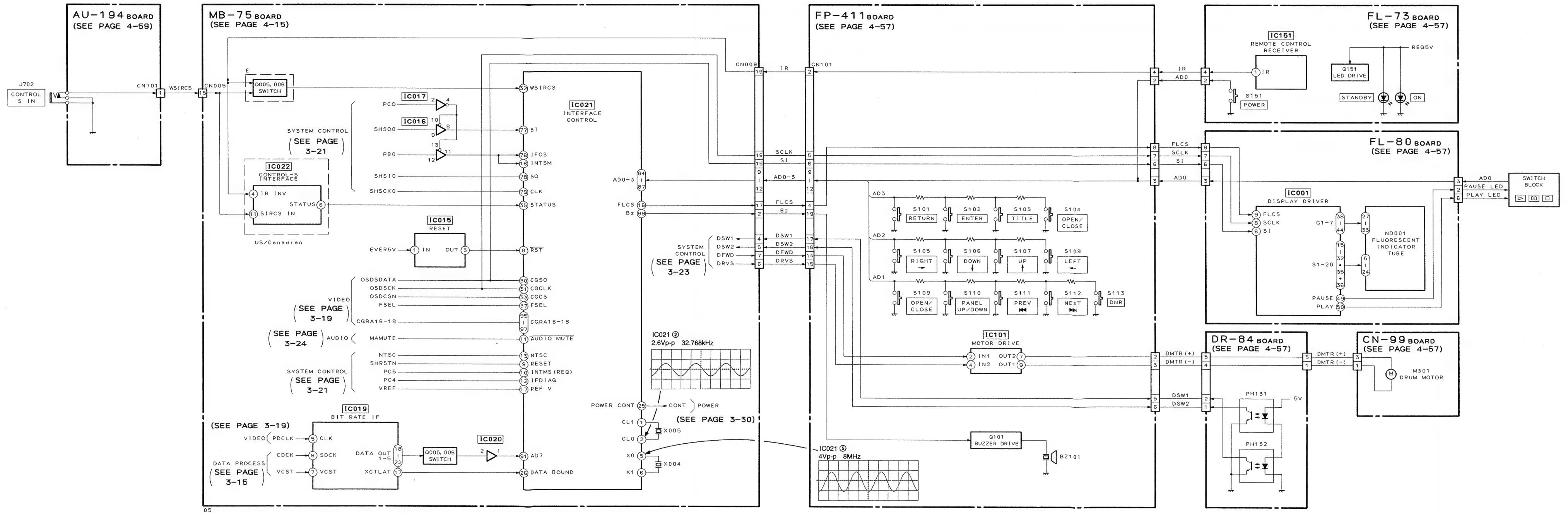




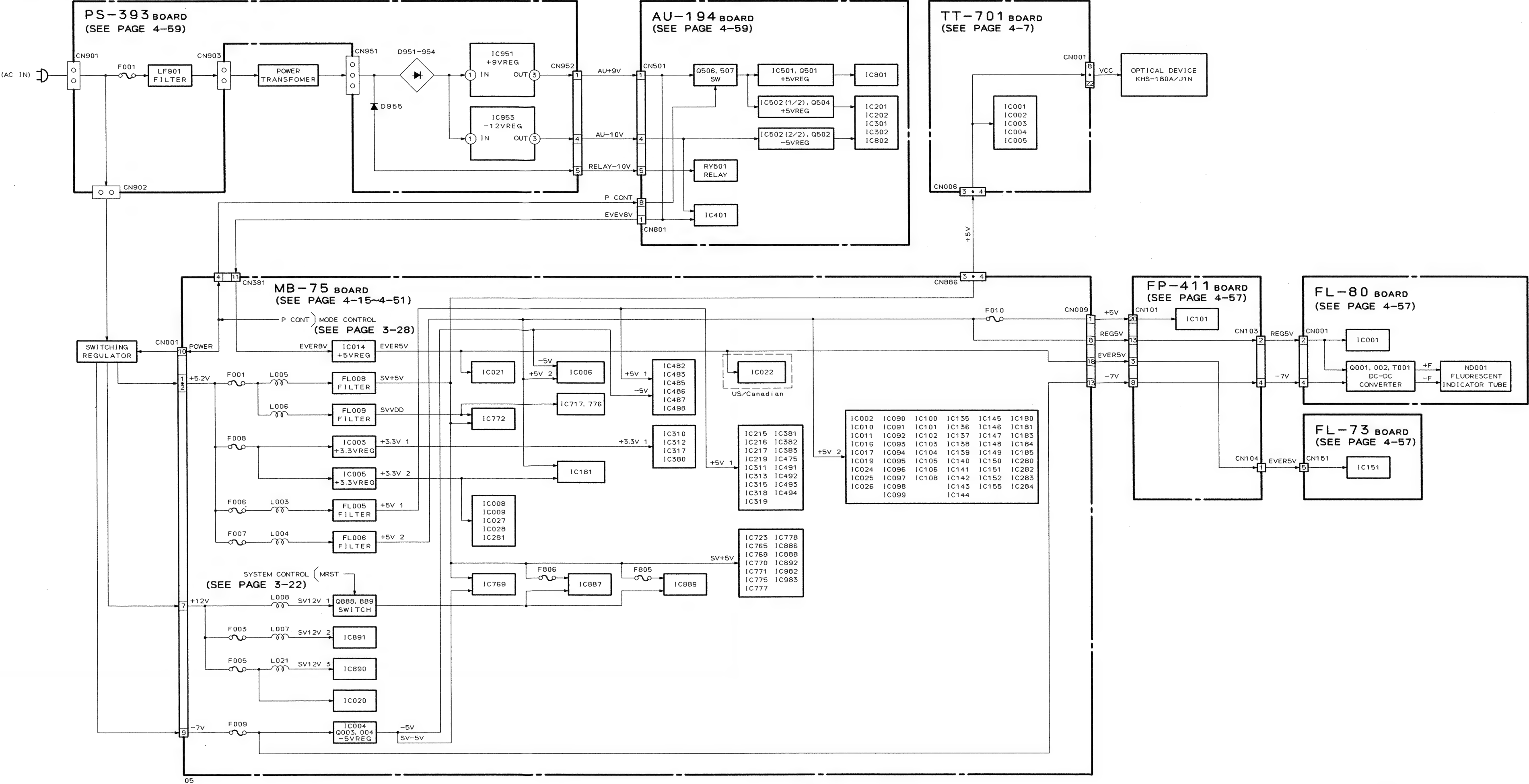
3-7. AUDIO BLOCK DIAGRAM



3-8. MODE CONTROL BLOCK DIAGRAM



3-9. POWER SUPPLY BLOCK DIAGRAM



4-1. FRAME SCHEMATIC DIAGRAM

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- — : indicates a lead wire mounted on the component side.
- — : indicates a lead wire mounted on the printed side.
- : Through hole.
- : Parts mounted on the conductor side.
- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern on the rear side.*
- Circled numbers refer to waveforms.

Caution:

Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
Conductor Side: Parts on the conductor side are indicated.
Parts face side: Parts on the parts face side seen from the parts face are indicated.
Component Side: Parts on the component side are indicated.

For schematic Diagram:

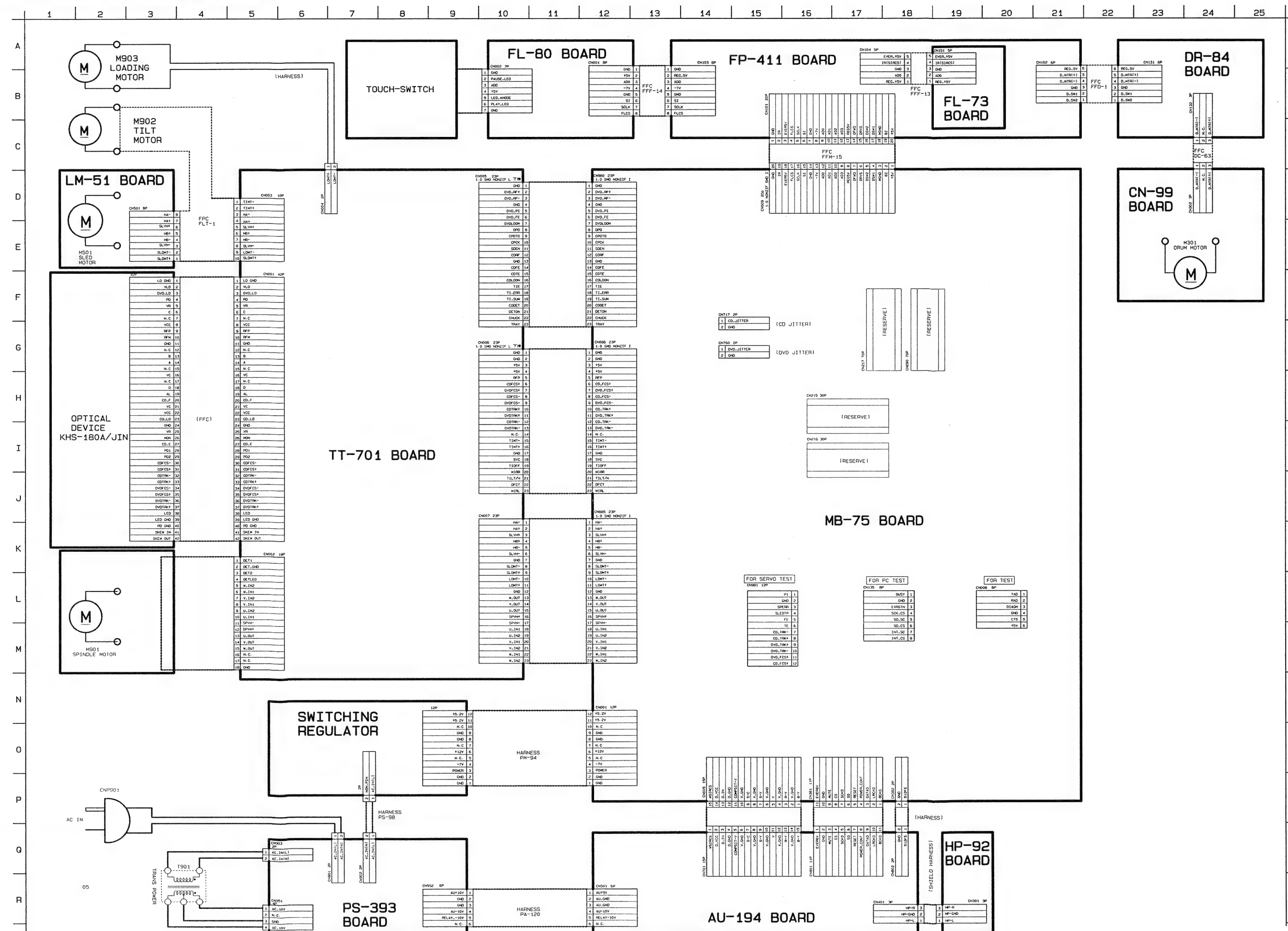
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in Ω , $\frac{1}{4}W$ (Chip resistors : $\frac{1}{10}W$) unless otherwise specified.
 $k\Omega$: 1000 Ω , $M\Omega$: 1000 $k\Omega$.
- All capacitors are in μF unless otherwise noted. pF : μF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- : internal component.
- : adjustment for repair.*
- : B+ Line.*
- : B- Line.*
- : IN/OUT direction of B line (+, -).*
- Circled numbers refer to waveforms.*
- Voltages are dc between measurement point.*
- Readings are taken with color bar signals on DVD reference disc and when playing CD reference disc.*
- Readings are taken with a digital multimeter (DC 10M Ω).*
- Voltage variations may be noted due to normal production tolerances.*

Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

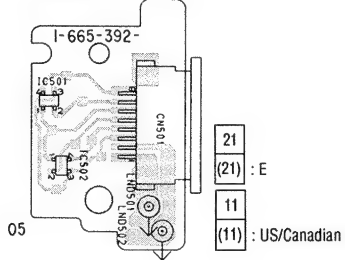
- * : indicated by the color red.



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

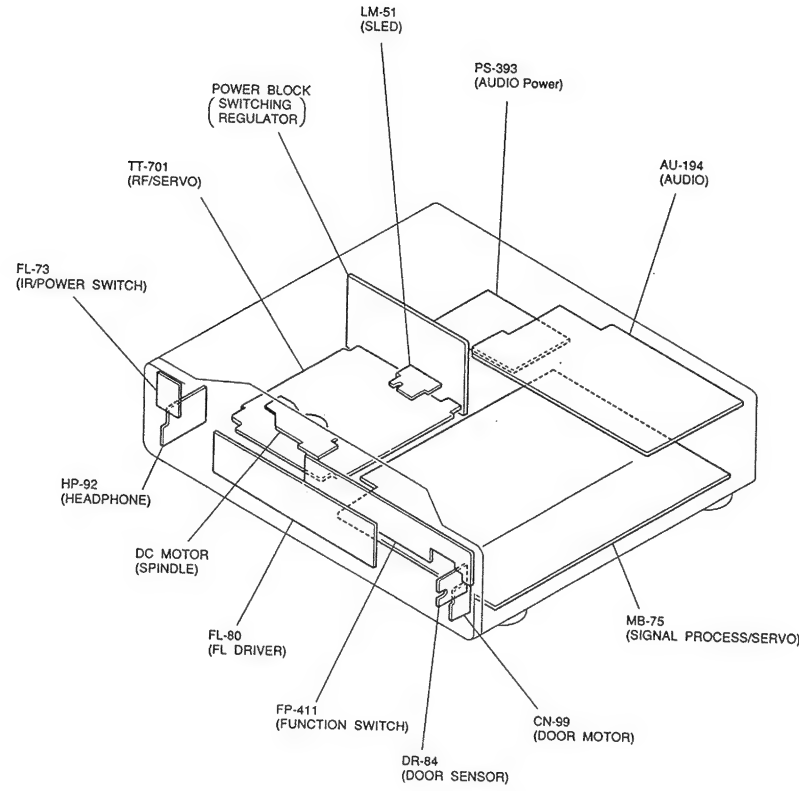
TT-701 (RF, SERVO), LM-51 (SLED) PRINTED WIRING BOARDS
- Ref. No.: TT-701 Board; 5,000 series, LM-51 Board; 1,000 series -

LM-51 BOARD



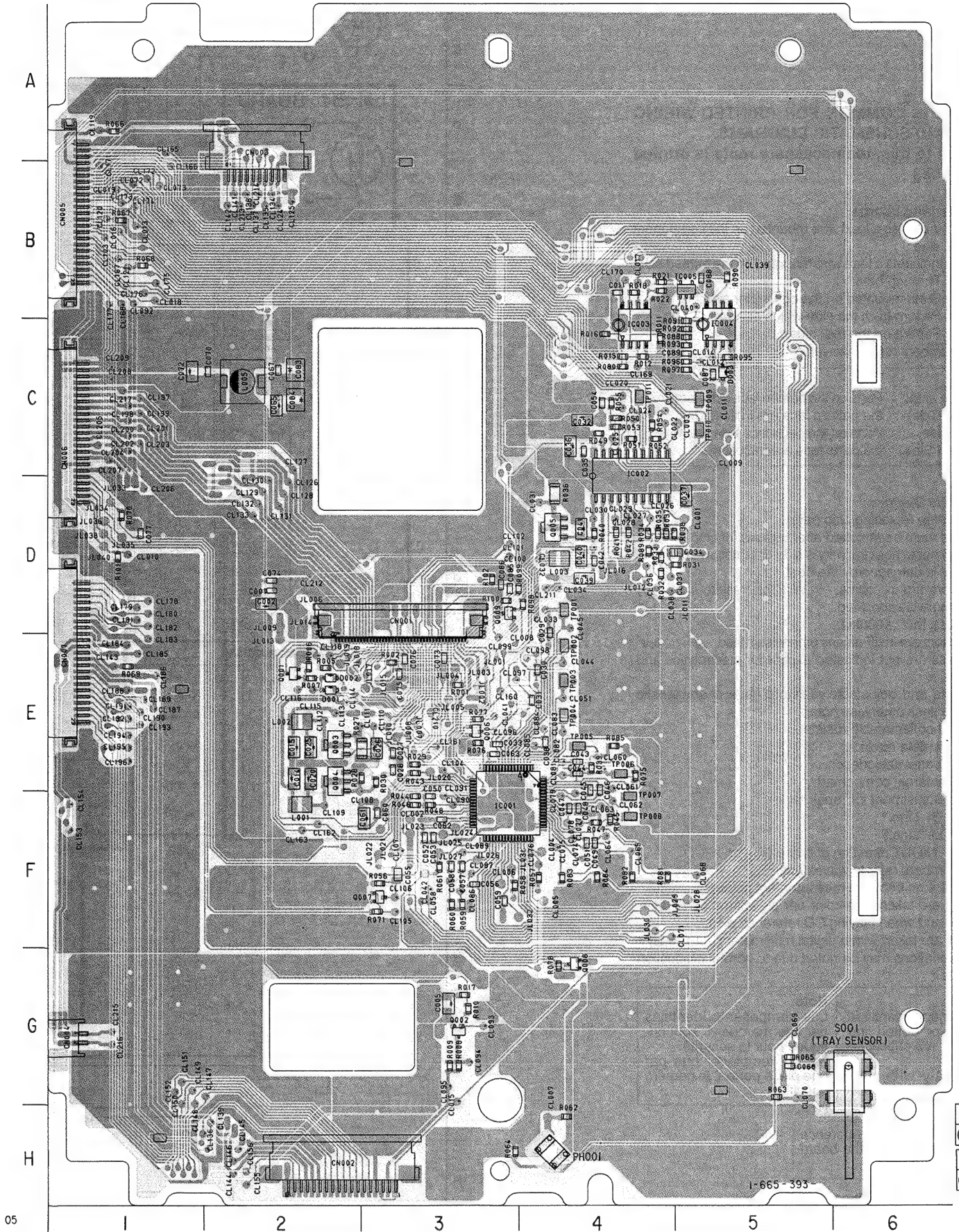
TT-701 BOARD

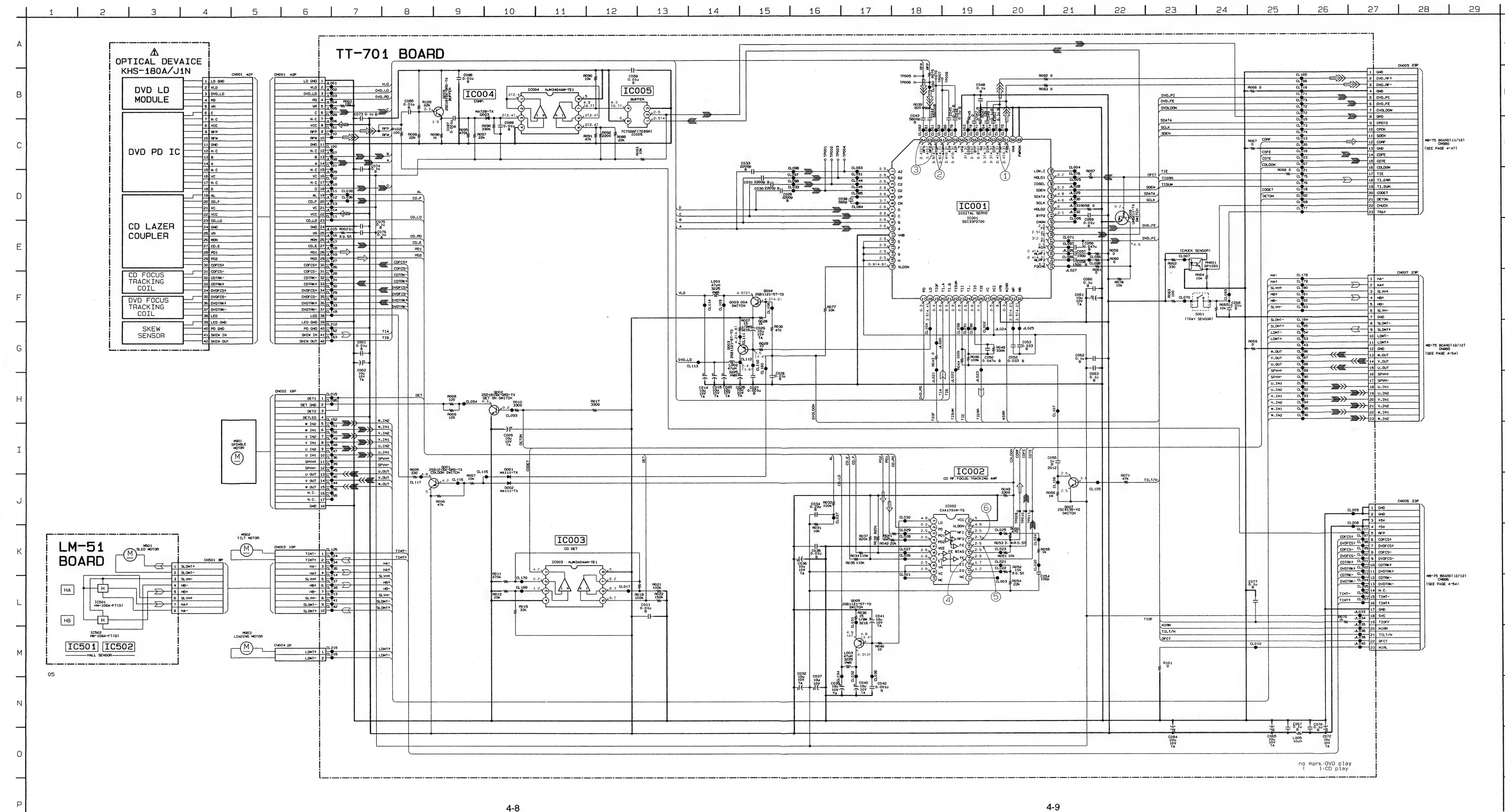
- CN001 D-2
- CN002 H-2
- CN003 A-2
- CN004 G-1
- CN005 B-1
- CN006 C-1
- CN007 D-1
- D001 E-2
- D002 E-2
- D003 C-5
- IC001 F-3
- IC002 C-4
- IC003 C-4
- IC004 C-5
- IC005 B-5
- Q001 E-2
- Q002 G-3
- Q003 E-2
- Q004 F-2
- Q005 D-4
- Q007 F-3
- Q008 G-4
- Q009 D-3



There are few cases that the part isn't mounted in this model is printed on this diagram.

TT-701 BOARD



TT-701 (RF, SERVO), LM-51 (SLED) SCHEMATIC DIAGRAM
 - Ref. No.: TT-701 Board; 5,000 series, LM-51 Board; 1,000 series -


MB-75 (SIGNAL PROCESS) PRINTED WIRING BOARD

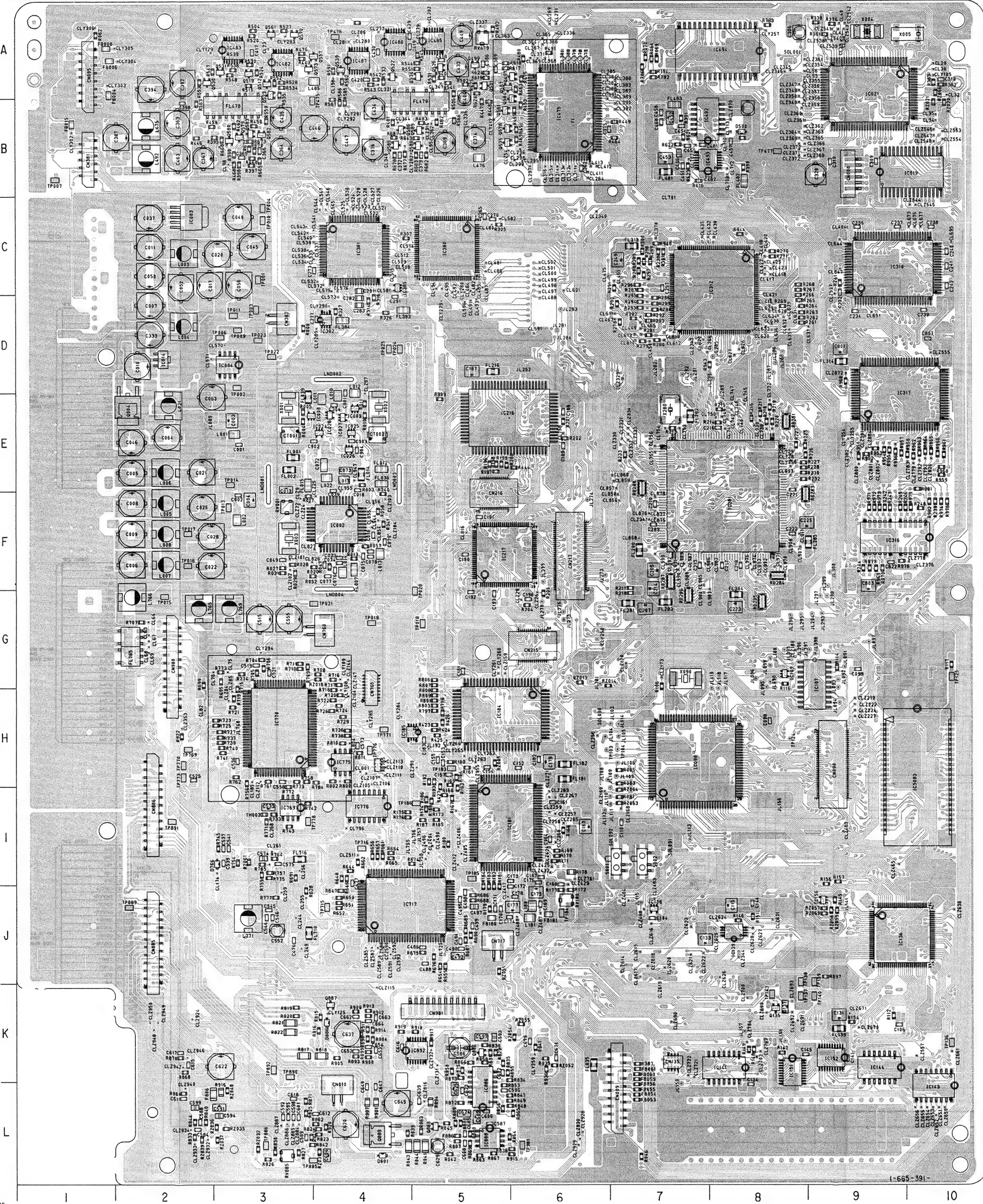
- Ref. No.: MB-75 Board; 3,000 series -

There are few cases that the part isn't mounted in this model is printed on this diagram.

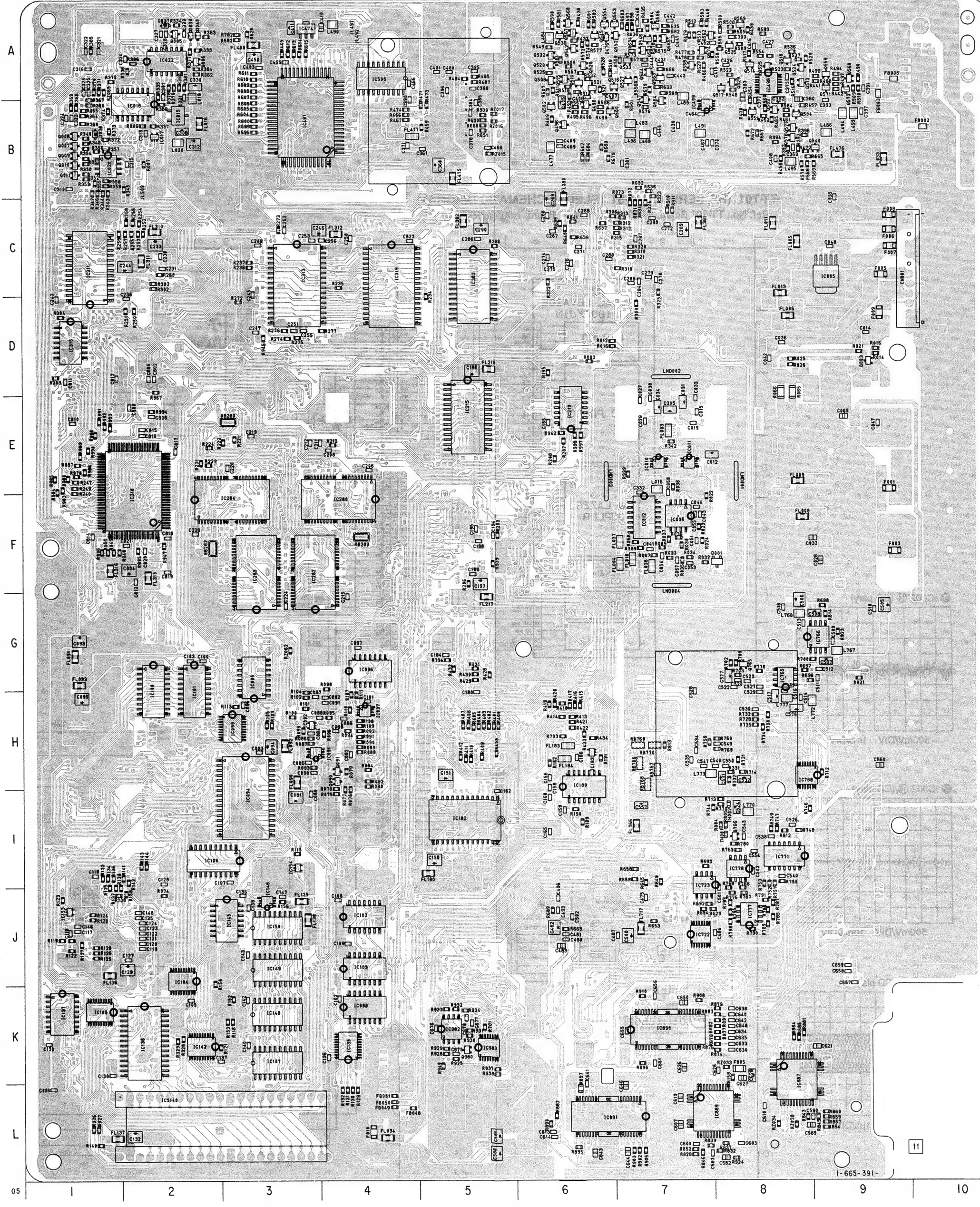
MB-75 BOARD (SIDE A)

MB-75 BOARD (SIDE A)

CN005	A-1	IC382	D-4
CN008	B-9	IC385	C-4
CN009	L-7	IC475	B-6
CN135	K-7	IC482	A-3
CN381	B-1	IC483	A-3
CN382	D-3	IC485	A-5
CN717	J-5	IC486	A-4
CN760	G-4	IC487	A-4
CN885	J-2	IC492	B-7
CN886	I-2	IC493	B-7
CN880	G-2	IC494	A-8
CN881	K-5	IC717	J-4
		IC769	I-3
D500	B-8	IC770	H-3
D601	L-4	IC775	H-4
D766	I-2	IC776	I-4
D886	K-4	IC886	K-5
		IC888	L-5
		IC892	K-5
IC002	F-4		
IC003	C-2		
IC004	D-3	Q004	E-2
IC008	E-4	Q497	A-6
IC009	E-4	Q499	A-5
IC014	D-2	Q501	A-5
IC019	B-10	Q512	A-3
IC031	A-9	Q519	A-3
IC054	E-4	Q522	A-4
IC025	E-4	Q523	A-3
IC026	E-4	Q526	A-5
IC027	E-4	Q530	A-3
IC028	E-4	Q531	A-3
IC090	H-7	Q534	A-5
IC108	J-7	Q539	A-4
IC109	G-8	Q557	A-4
IC136	J-9	Q561	A-3
IC139	J-8	Q570	A-3
IC141	K-8	Q573	A-4
IC143	K-10	Q575	B-5
IC144	K-9	Q578	B-5
IC151	K-8	Q579	B-3
IC152	K-9	Q580	B-3
IC156	J-9	Q581	A-5
IC181	I-5	Q582	B-3
IC184	H-5	Q583	B-3
IC185	H-4	Q584	A-5
IC216	E-5	Q585	B-4
IC217	F-5	Q586	B-4
IC281	J-8	Q587	A-5
IC310	C-9	Q588	B-5
IC312	C-8	Q589	B-5
IC316	F-9	Q886	K-5
IC317	D-9	Q887	K-4
IC380	C-5	Q888	L-5
IC381	C-4	Q889	L-4

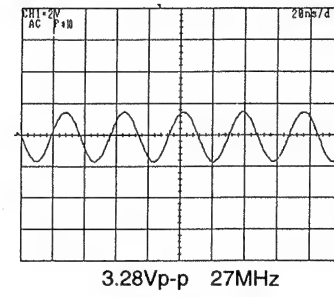


MB-75 BOARD (SIDE B)

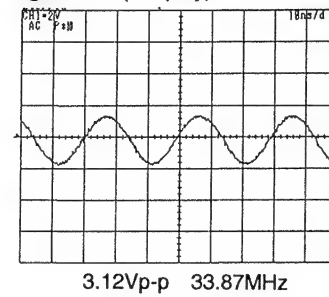


• Waveforms

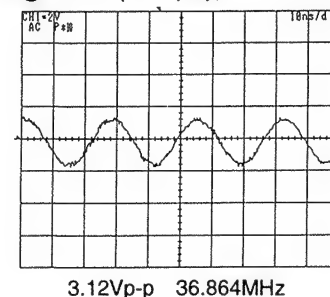
① TP018



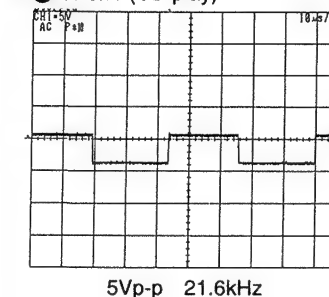
② TP019 (CD play)



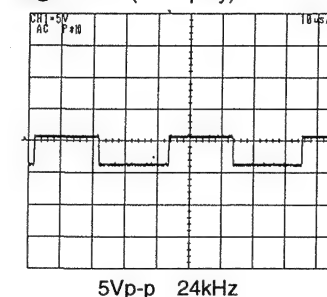
③ TP020 (DVD play)



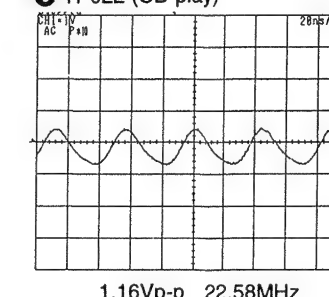
④ TP021 (CD play)



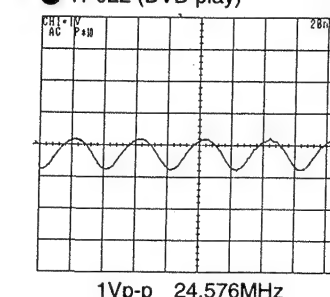
⑤ TP021 (DVD play)



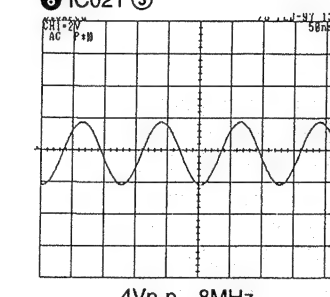
⑥ TP022 (CD play)



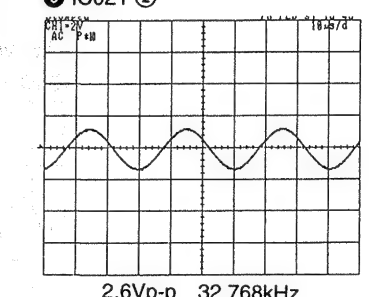
⑦ TP022 (DVD play)



⑧ IC021 ⑤

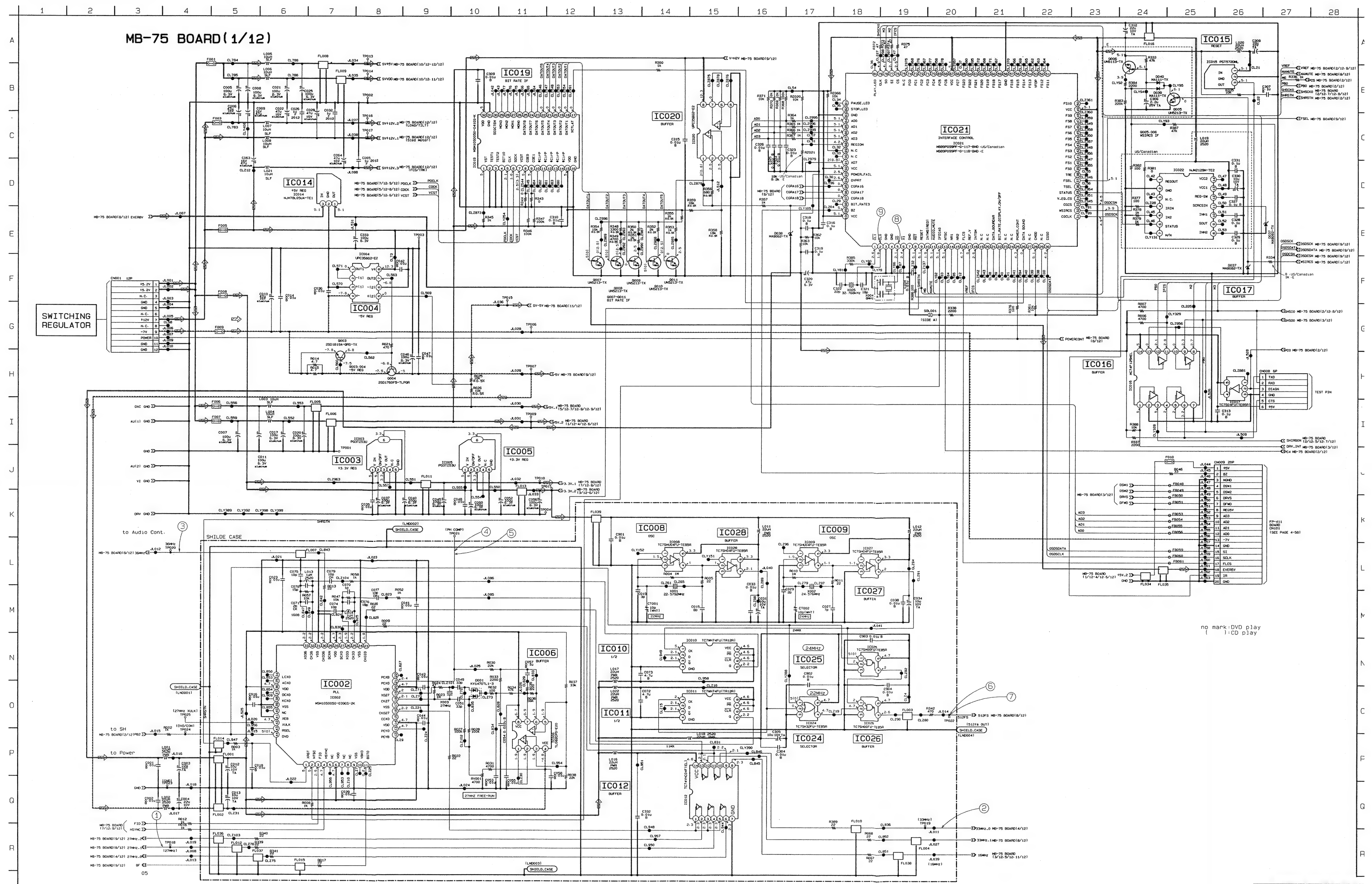


⑨ IC021 ②



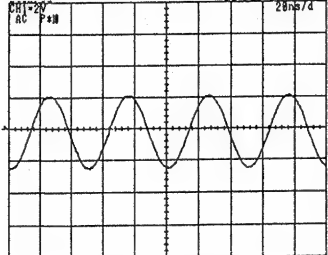
MB-75 (INTER FACE) SCHEMATIC DIAGRAM

- Ref. No.: MB-75 Board; 3,000 series -



• Waveform

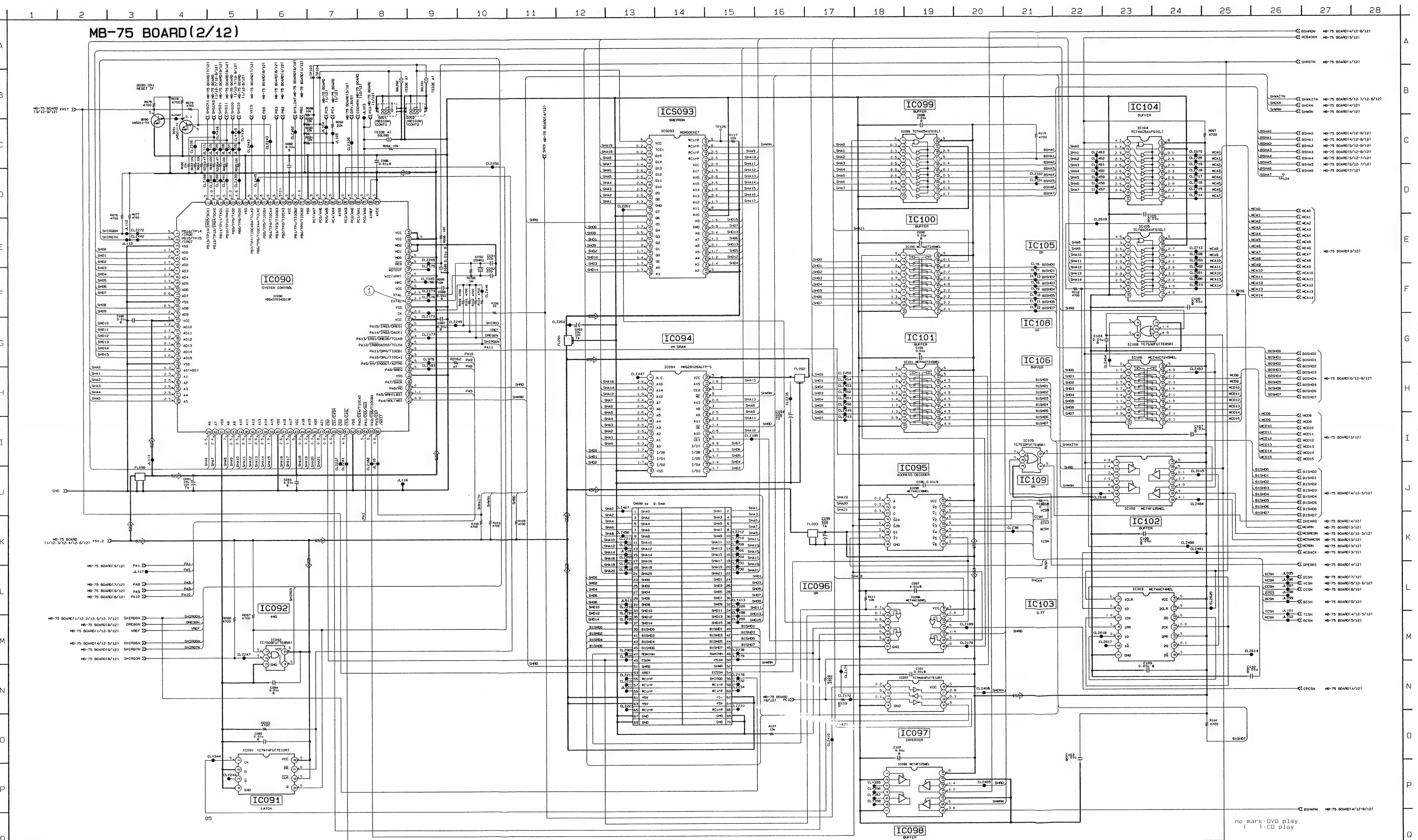
① IC090



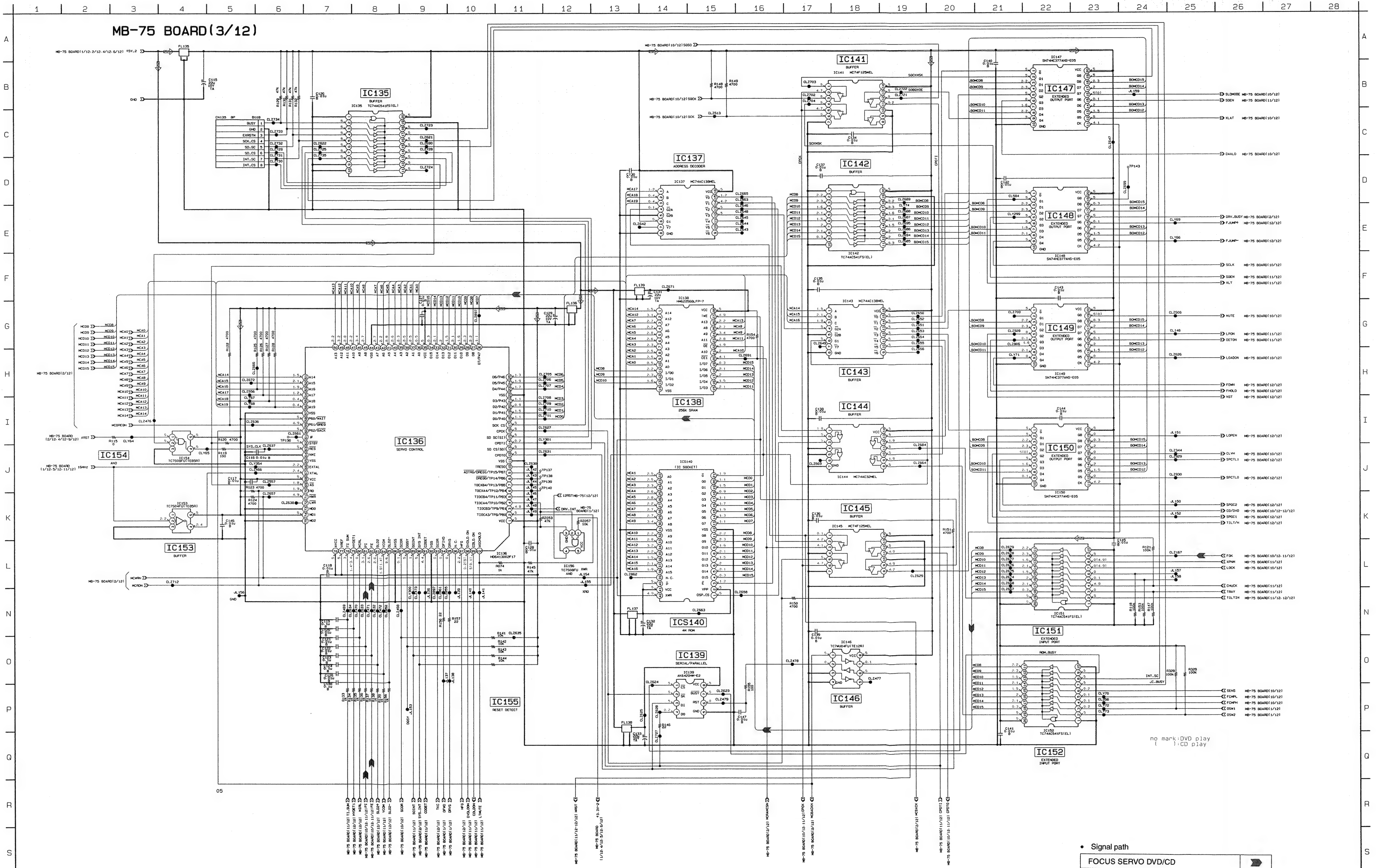
4.7Vp-p 20MHz

MB-75 (CPU) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

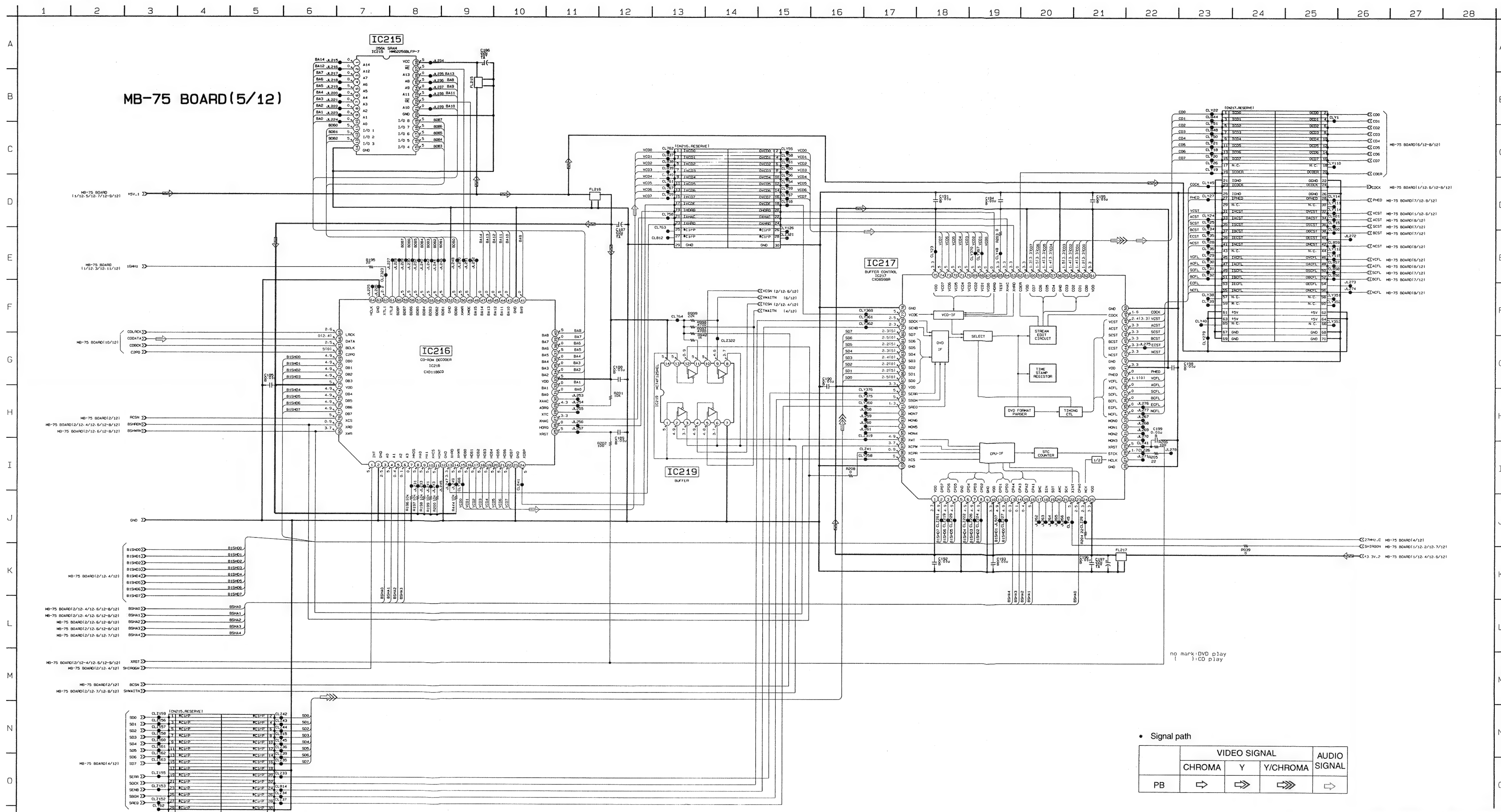
— Ref. No.: MB-75 Board; 3,000 series —



MB-75 (DRIVE CONTROL) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
- Ref. No.: MB-75 Board; 3,000 series -

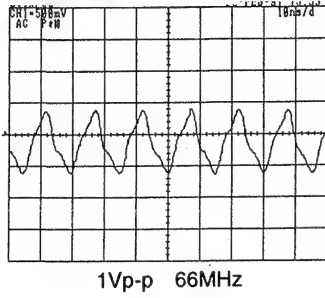


MB-75 (CD ROM DECOD) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
 - Ref. No.: MB-75 Board; 3,000 series -

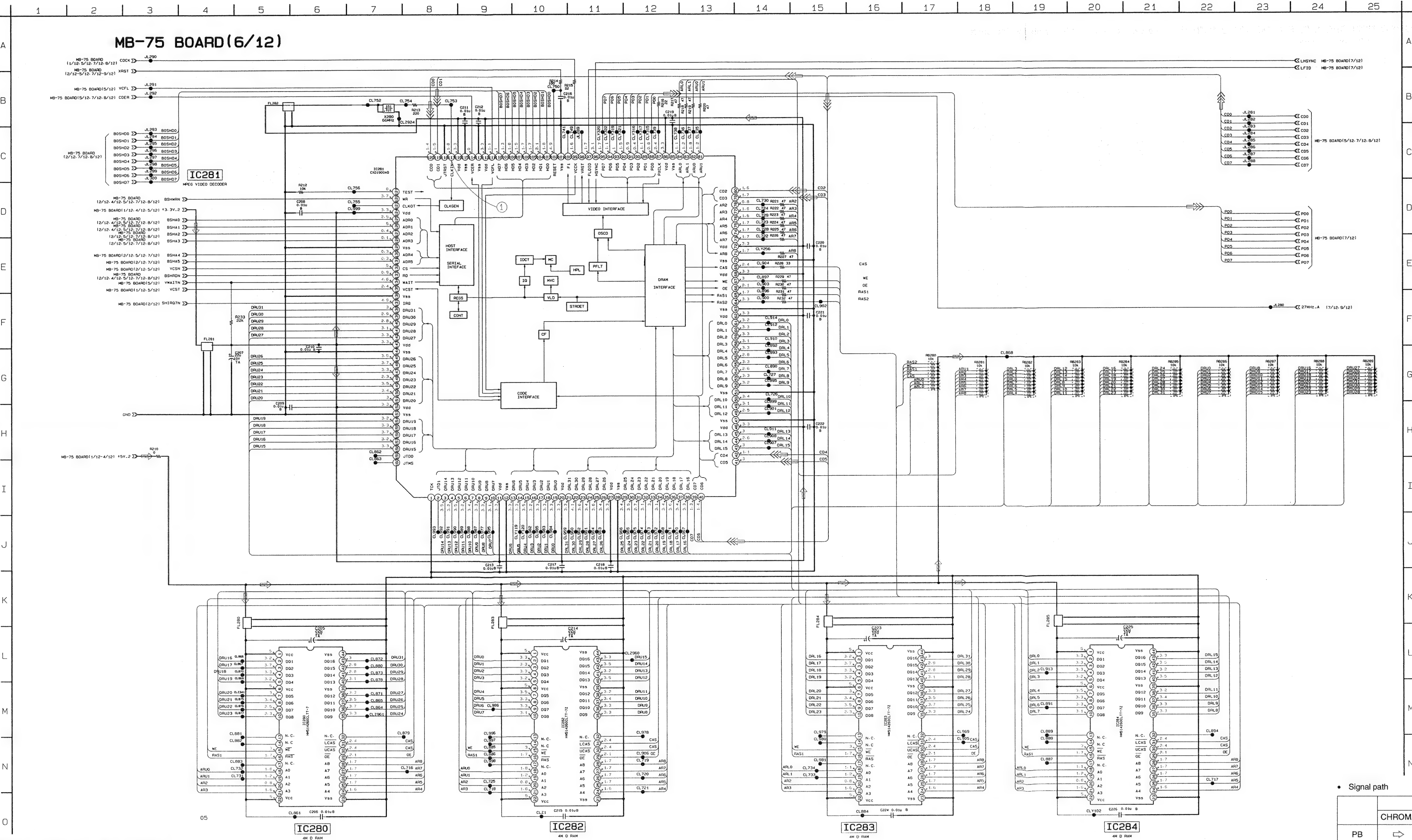


• Waveform

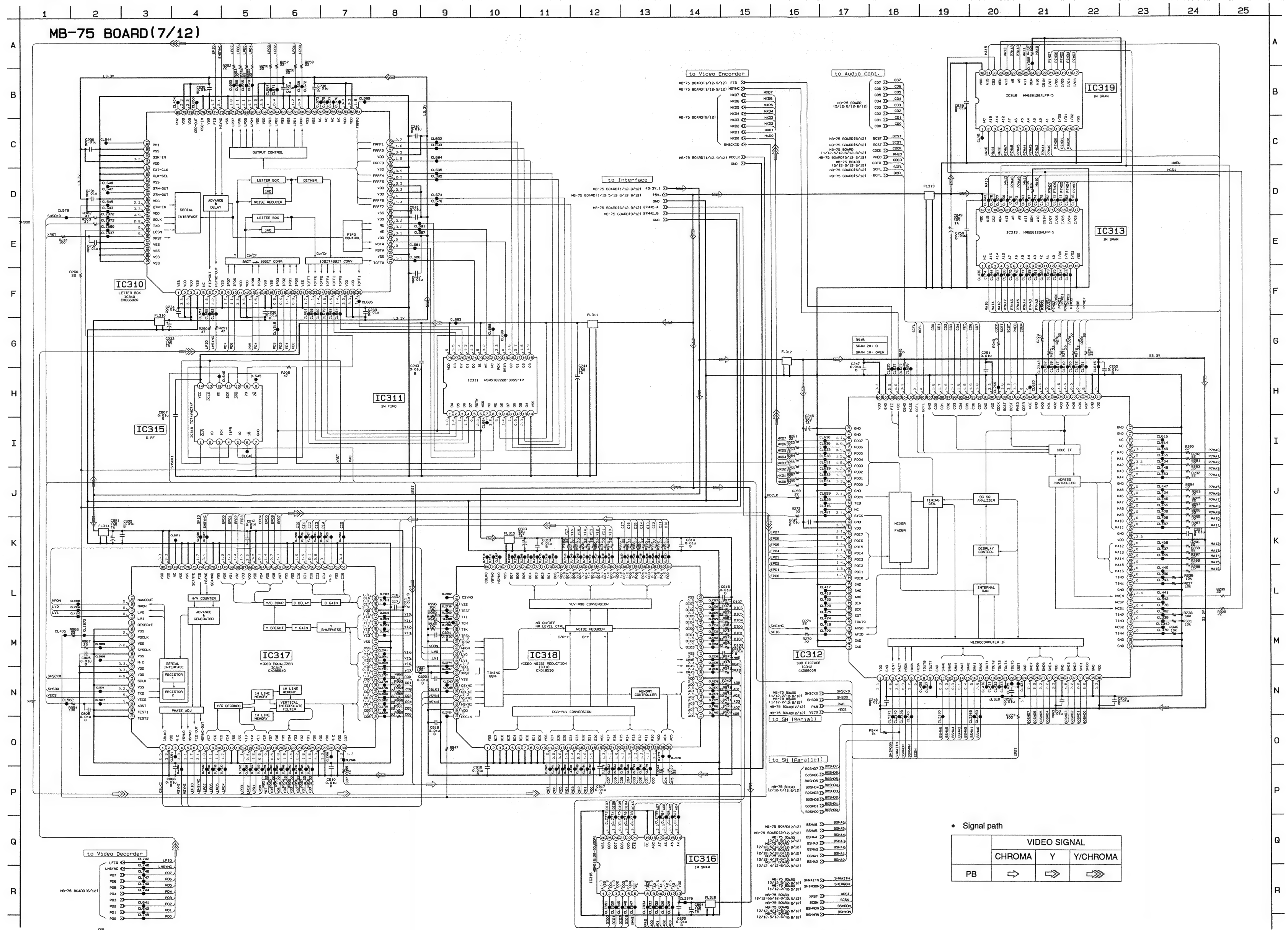
IC281



MB-75 (MPEG VIDEO DECORD) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
- Ref. No.: MB-75 Board; 3,000 series -



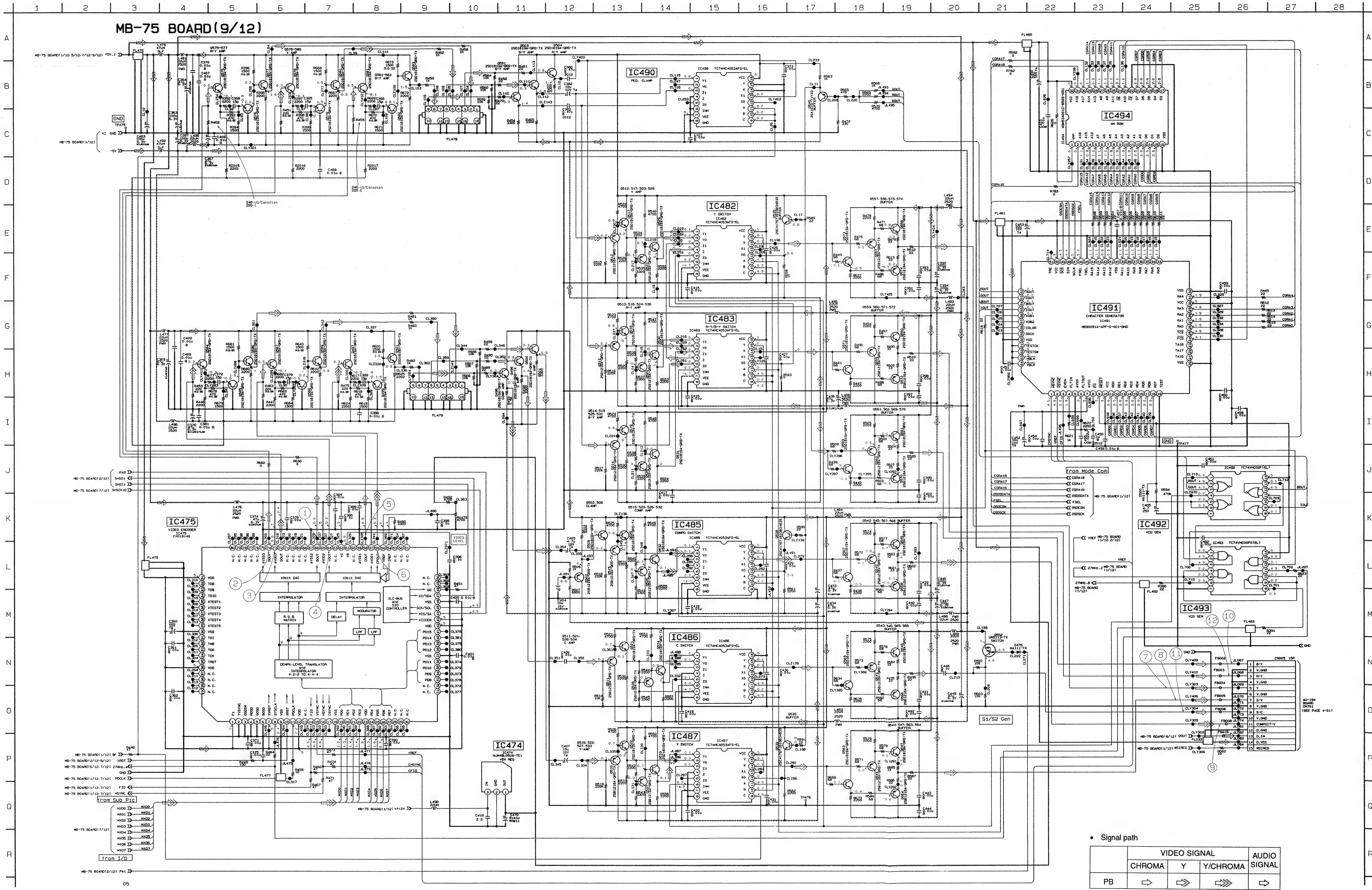
MB-75 (VIDEO EQ, LETTER BOX, SUB PICTURE) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
 - Ref. No.: MB-75 Board; 3,000 series -



4-36

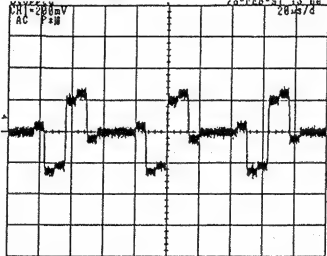


MB-75 (VIDEO) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
- Ref. No.: MB-75 Board; 3,000 series -



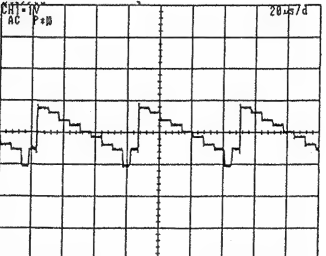
• Waveforms

① IC475 ⑥



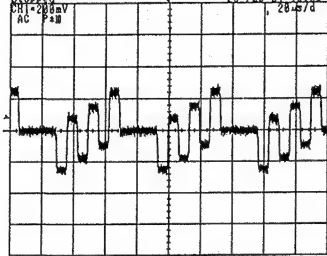
570mVp-p (H)

⑦ CN005 ⑥



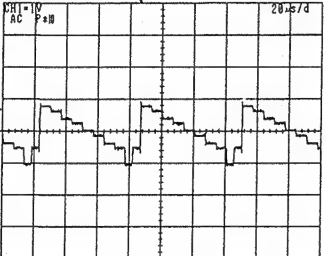
1Vp-p (H)

② IC475 ⑦



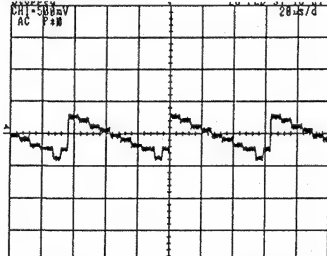
580mVp-p (H)

⑧ CN005 ⑦



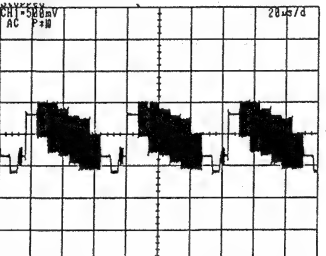
1Vp-p (H)

③ IC475 ⑧



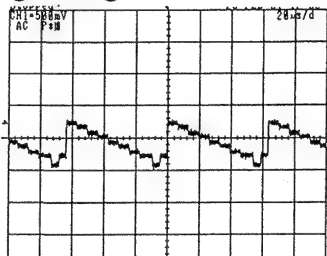
740mVp-p (H)

⑨ CN005 ⑧



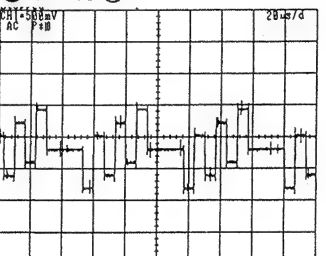
1Vp-p (H)

④ IC475 ⑨



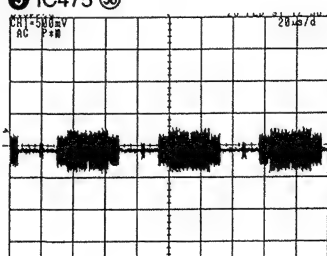
760mVp-p (H)

⑩ CN005 ⑨



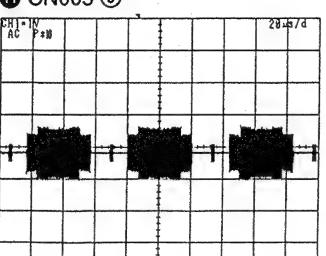
700mVp-p (H)

⑤ IC475 ⑩



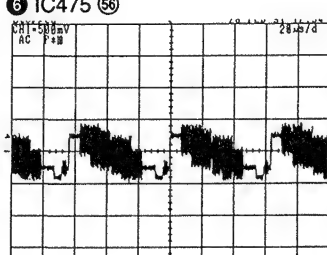
720mVp-p (H)

⑪ CN005 ⑩



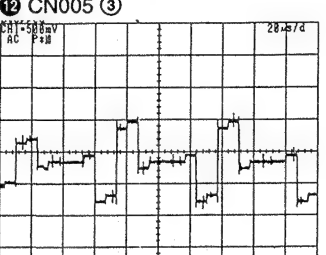
1.72Vp-p (H)

⑥ IC475 ⑪



920mVp-p (H)

⑫ CN005 ⑪

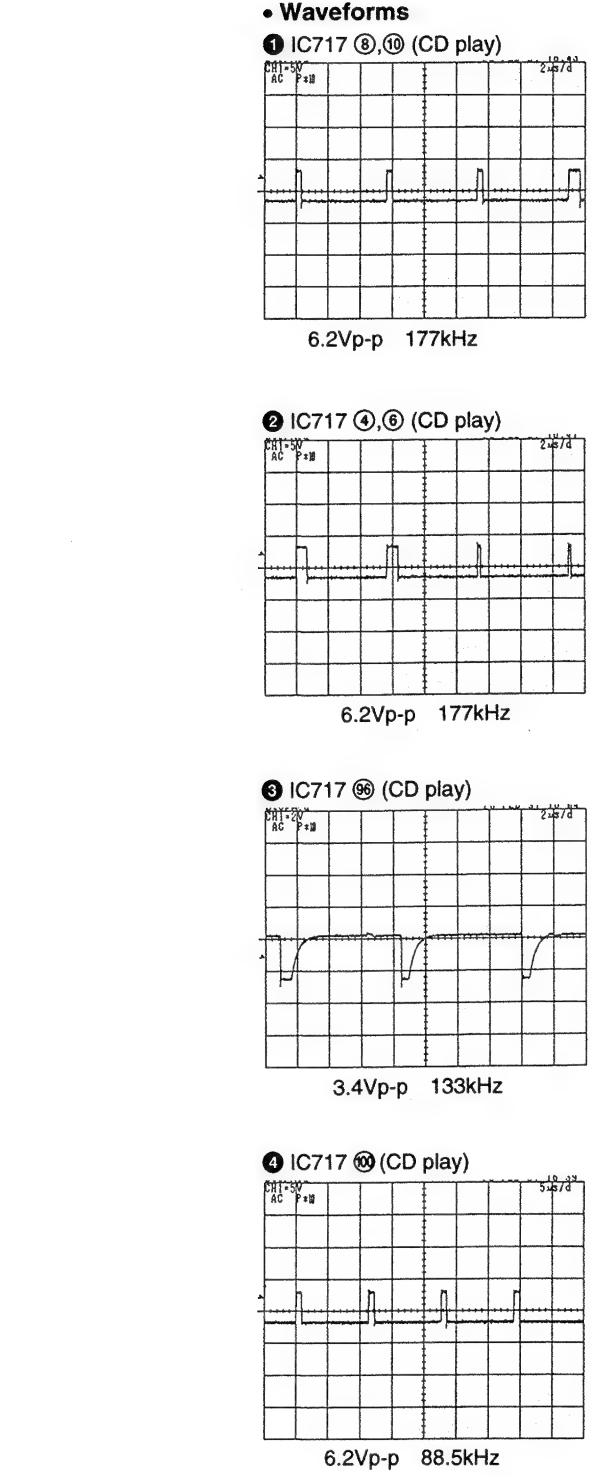


700mVp-p (H)

• Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	→	→	→	→

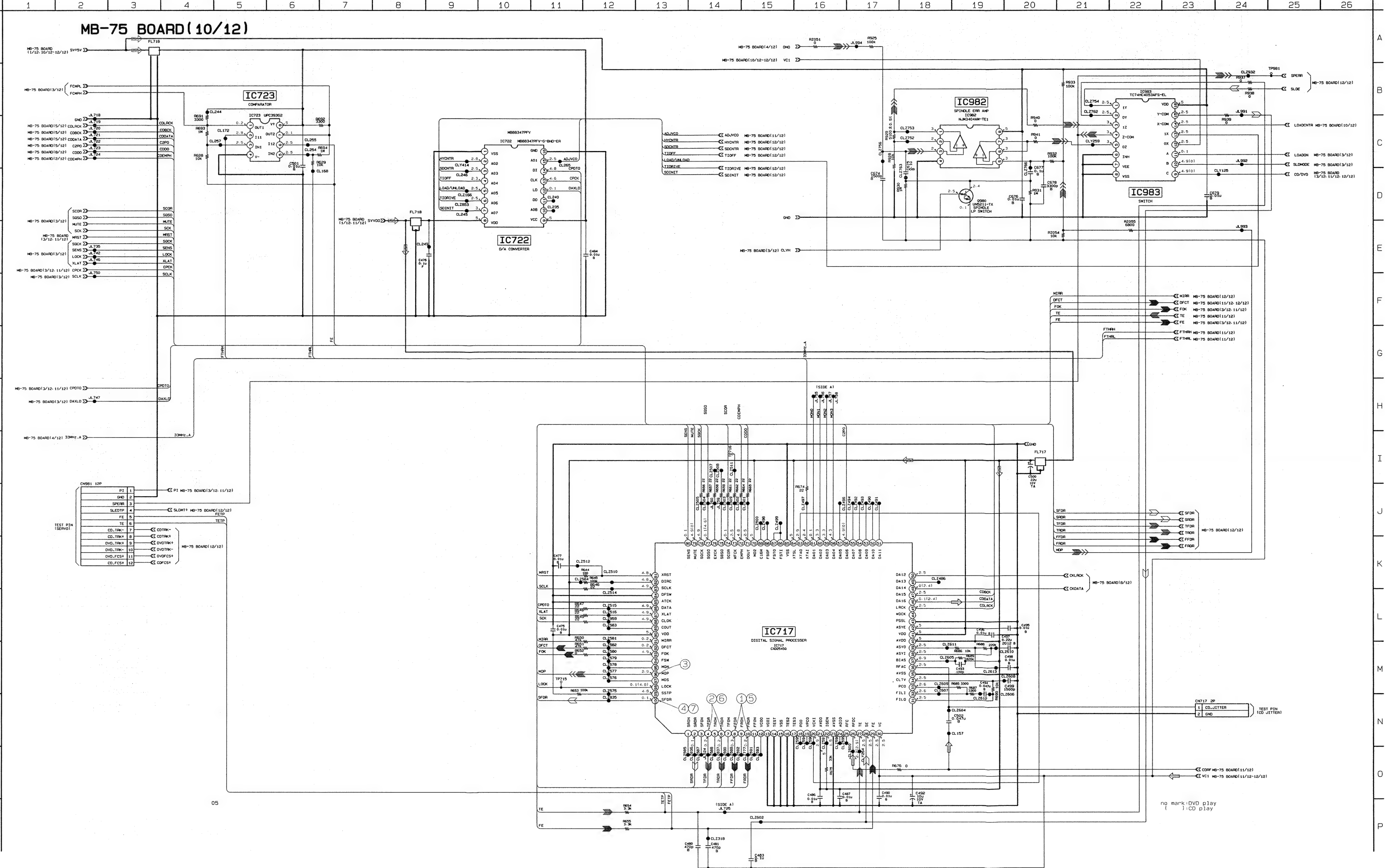
MB-75 (DEGITAL SERVO) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
- Ref. No.: MB-75 Board; 3,000 series -



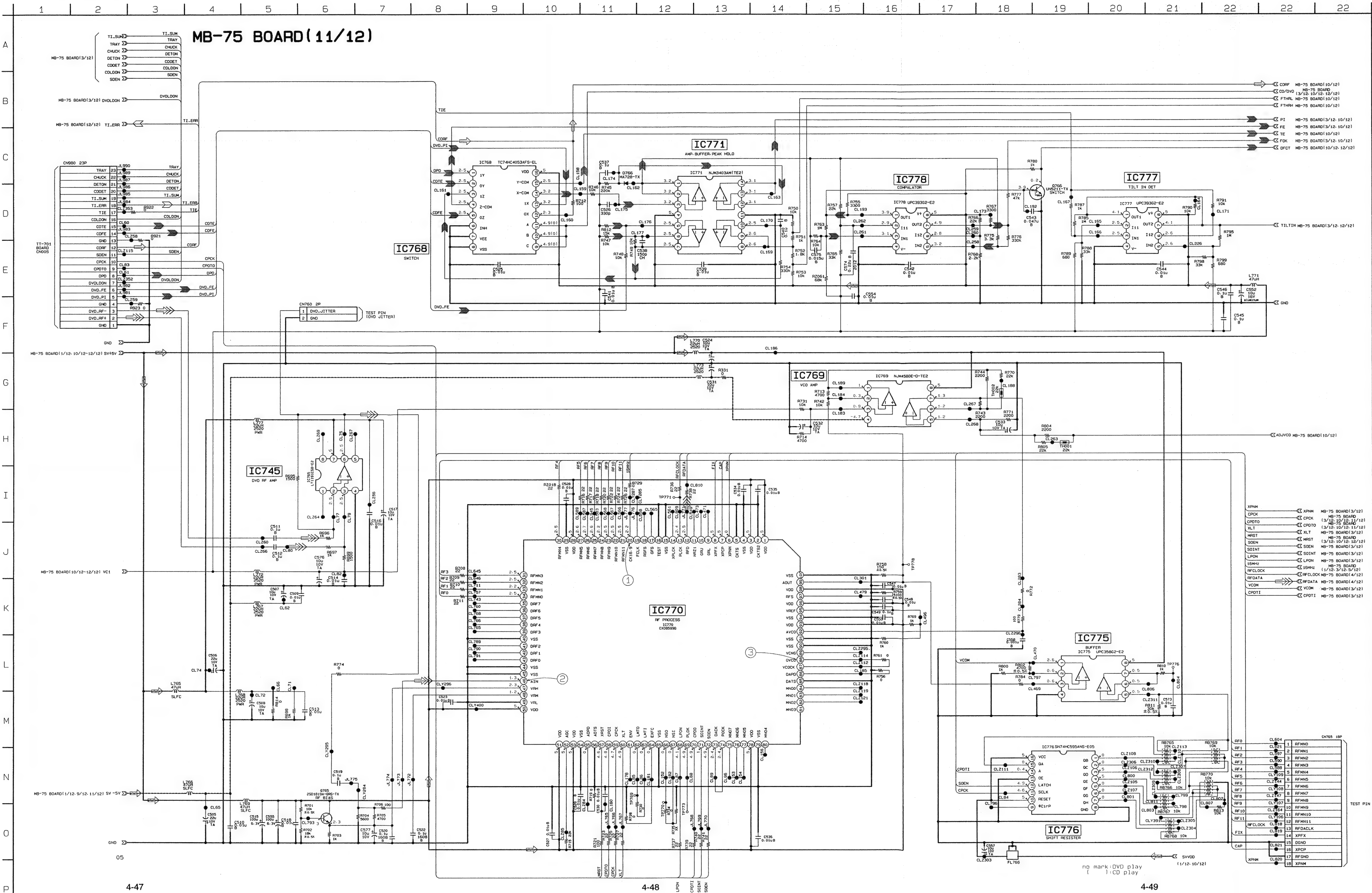
- Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇒	⇒	⇒⇒	⇒

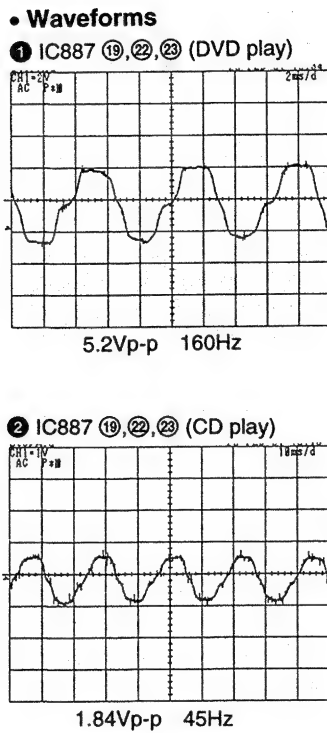
SPINDLE SERVO (SPEED AND PHASE)	⇒⇒⇒
TRACKING SERVO DVD/CD CDV	⇒⇒
SLIDE SERVO DVD/CD	⇒
FOCUS SERVO	⇒⇒
SKREW SERVO DVD/CD	⇒



MB-75 (RF BLOCK) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
 - Ref. No.: MB-75 Board; 3,000 series -



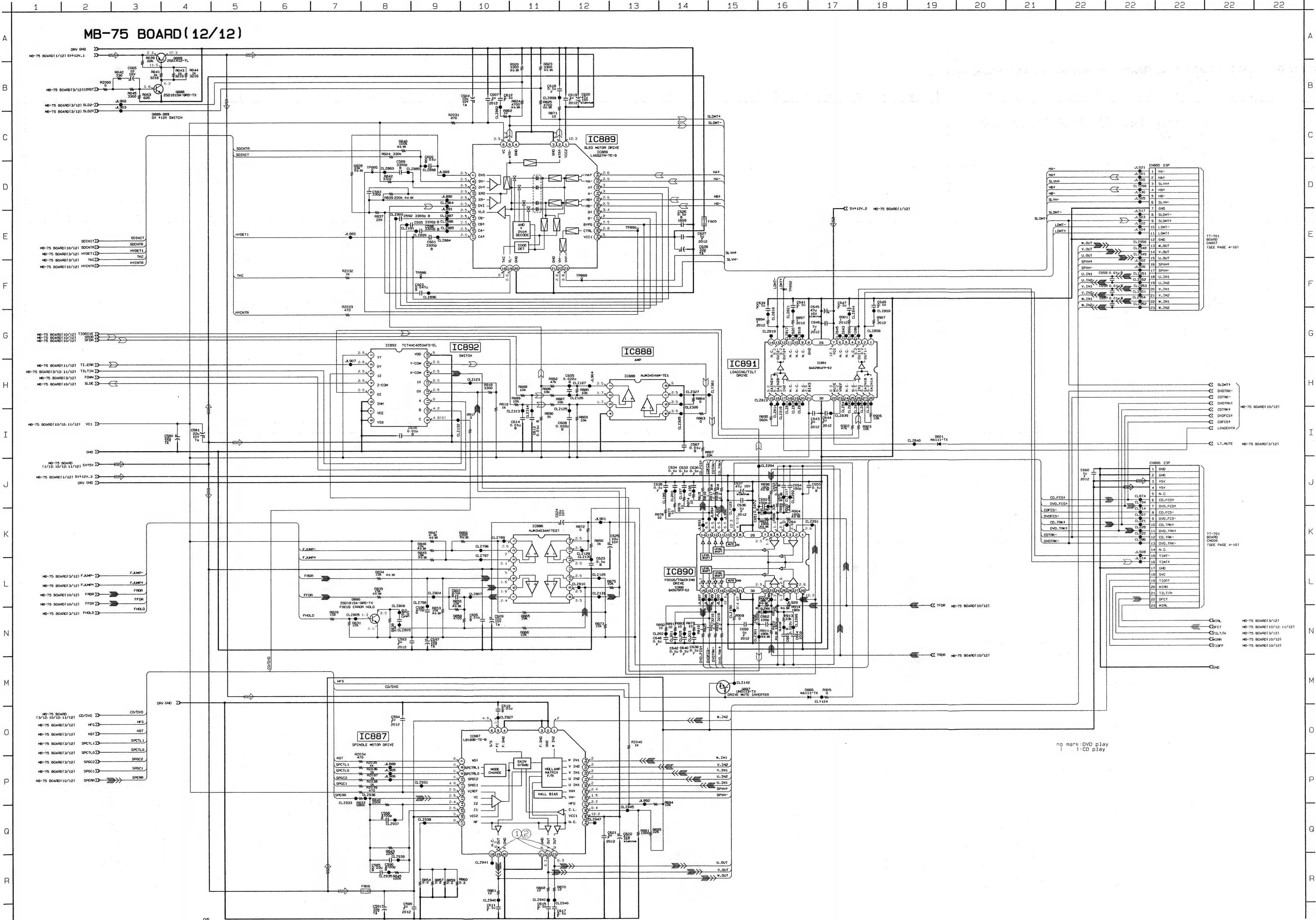
MB-75 (DRIVE) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
- Ref. No.: MB-75 Board; 3,000 series -



• Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇒	⇒	⇒	⇒

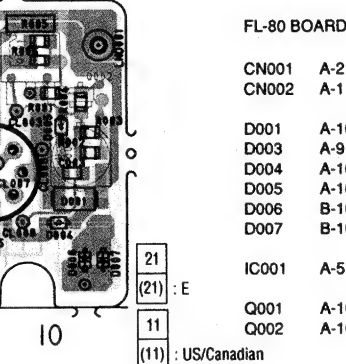
SPINDLE SERVO (SPEED AND PHASE)	⇒⇒
TRACKING SERVO DVD/CD CDV	⇒
SLIDE SERVO DVD/CD	⇒
FOCUS SERVO	⇒
SKEW SERVO DVD/CD	⇒



no mark DVD play
1 CD play

— Ref. No.: CN-99 Board, DR-84 Board, FL-73 Board, FL-80 Board, FP-411 Board, HP-92 Board; 1,000 series —

There are few cases that the part isn't mounted in this model is printed on this diagram.



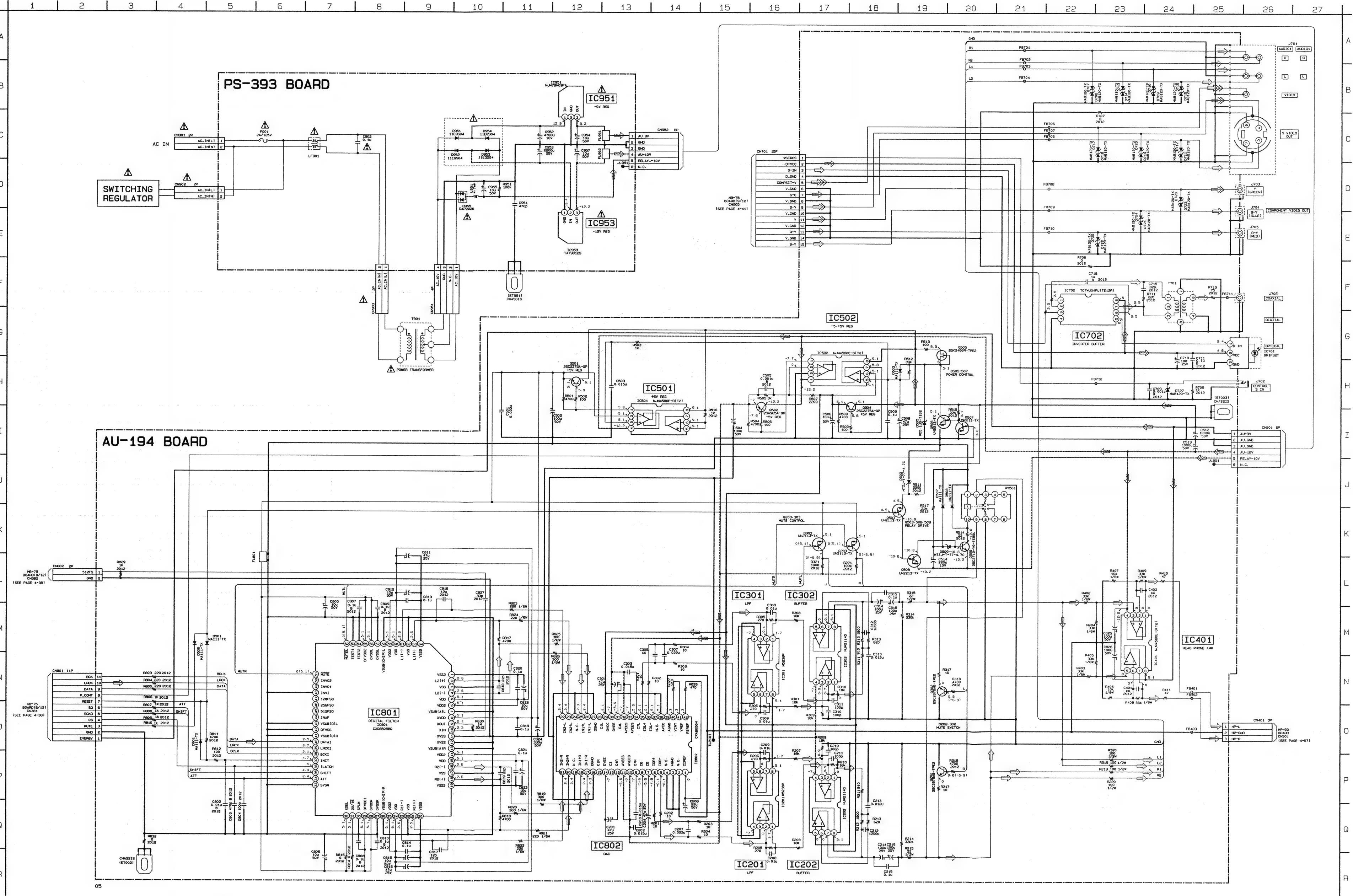
AU-194 (AUDIO, I/O), PS-393 (AUDIO POWER) SCHEMATIC DIAGRAM
- Ref. No.: AU-194 Board; 2,000 series, PS-393 Board; 4,000 series -

Note:
The components identified
by mark Δ or dotted line
with mark Δ are critical for
safety.
Replace only with part
number specified.

Note:
Les composants identifiés
par une marque Δ sont criti-
ques pour la sécurité.
Ne les remplacer que par
une pièce portant le numéro
spécifié.

• Signal path

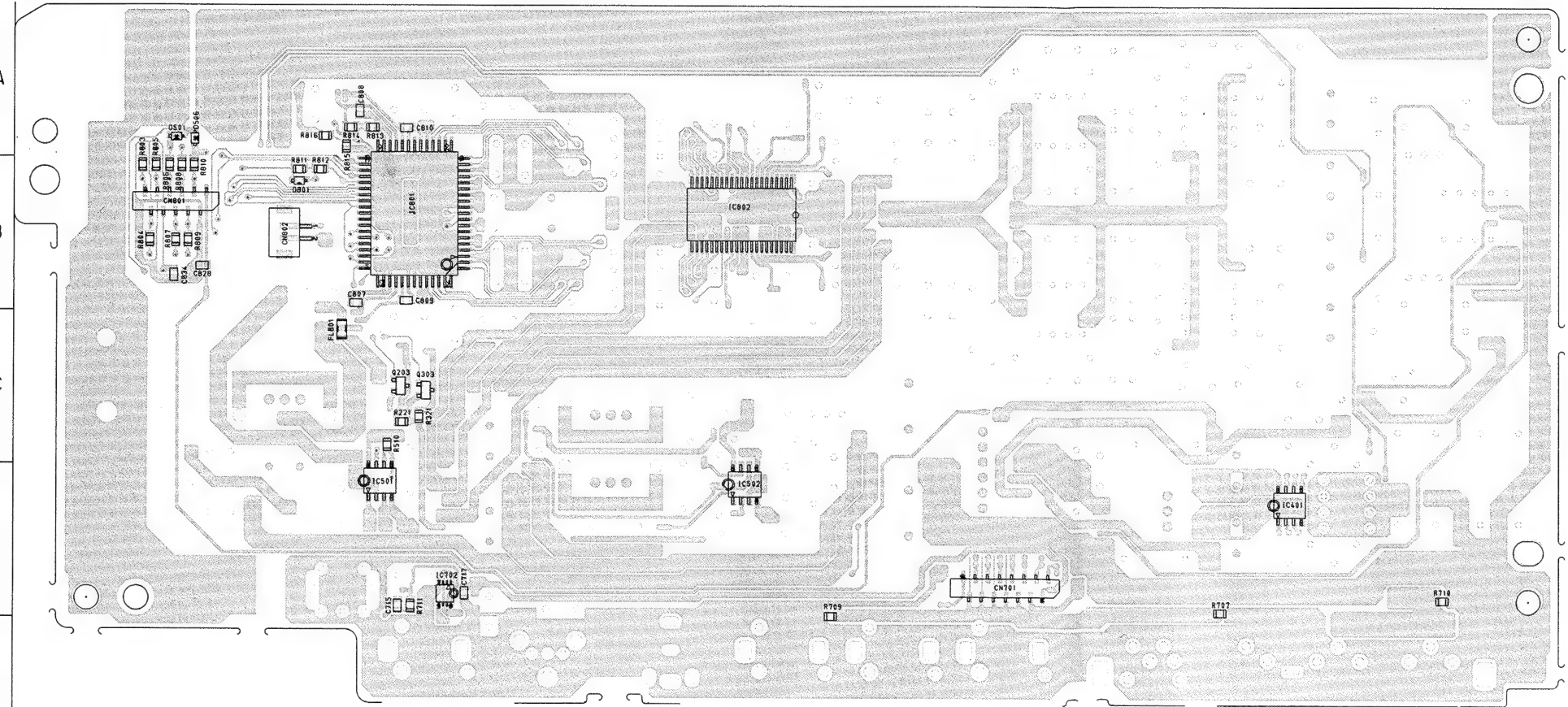
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	\Rightarrow	\Rightarrow	\Rightarrow	\Rightarrow



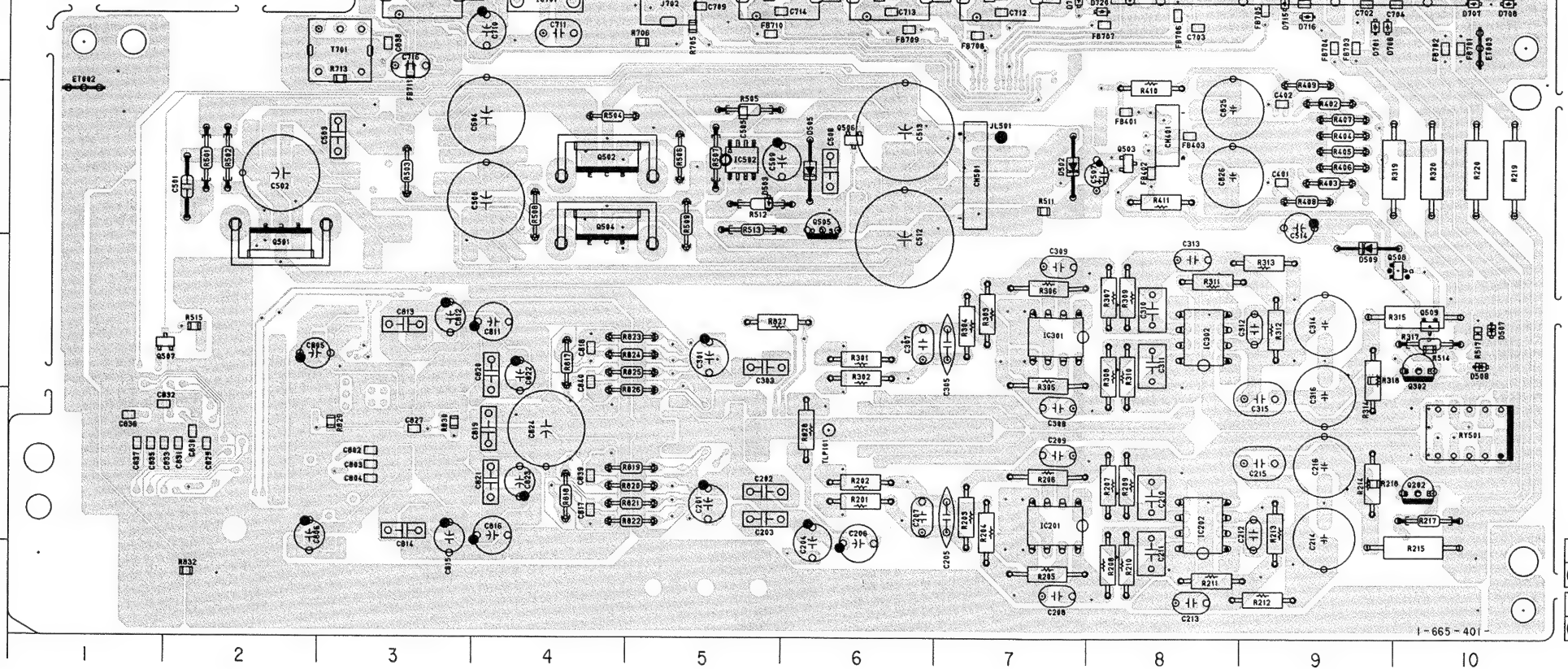
AU-194 (AUDIO, I/O), PS-393 (AUDIO POWER) PRINTED WIRING BOARDS

— Ref. No.: AU-194 Board; 2,000 series, PS-393 Board; 4,000 series —

AU-194 BOARD (SIDE A)



AU-194 BOARD (SIDE B)



AU-194 BOARD

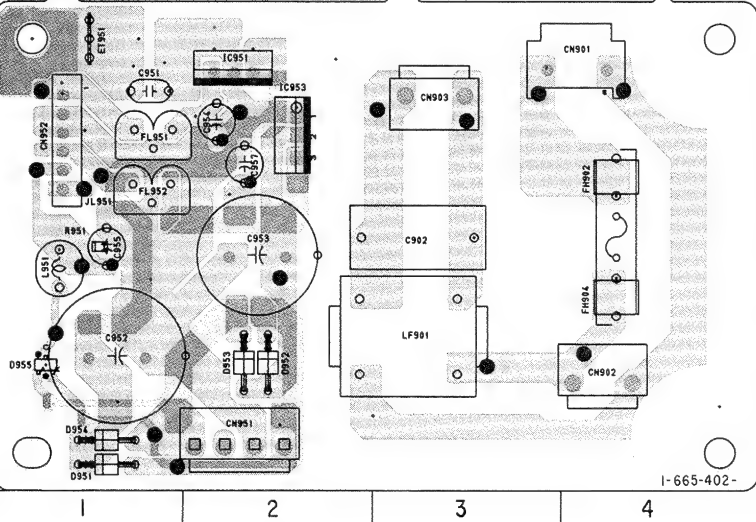
CN401 G-8
CN501 G-7
CN701 D-7
CN801 B-1
CN802 B-2

D501 A-2
D502 G-7
D503 G-5
D505 G-6
D506 A-2
D507 H-10
D508 H-10
D509 G-9
D707 F-10
D708 F-10
D709 F-9
D710 F-9
D711 F-8
D712 F-8
D713 F-10
D714 F-10
D715 F-9
D716 F-9
D717 F-9
D718 F-8
D719 F-7
D720 F-8
D721 F-6
D722 F-6
D723 F-7
D724 F-6
D725 F-5
D727 F-5
D728 F-7
D801 B-2

IC201 I-7
IC202 I-8
IC301 H-7
IC302 H-8
IC401 D-9
IC501 D-3
IC502 D-5
IC701 F-4
IC702 D-3
IC801 B-3
IC802 B-5

Q202 I-10
Q203 C-3
Q302 H-10
Q303 C-3
Q501 G-2
Q502 G-4
Q503 G-8
Q504 G-4
Q505 G-6
Q506 G-6
Q507 H-1
Q508 H-10
Q509 H-10

PS-393 BOARD

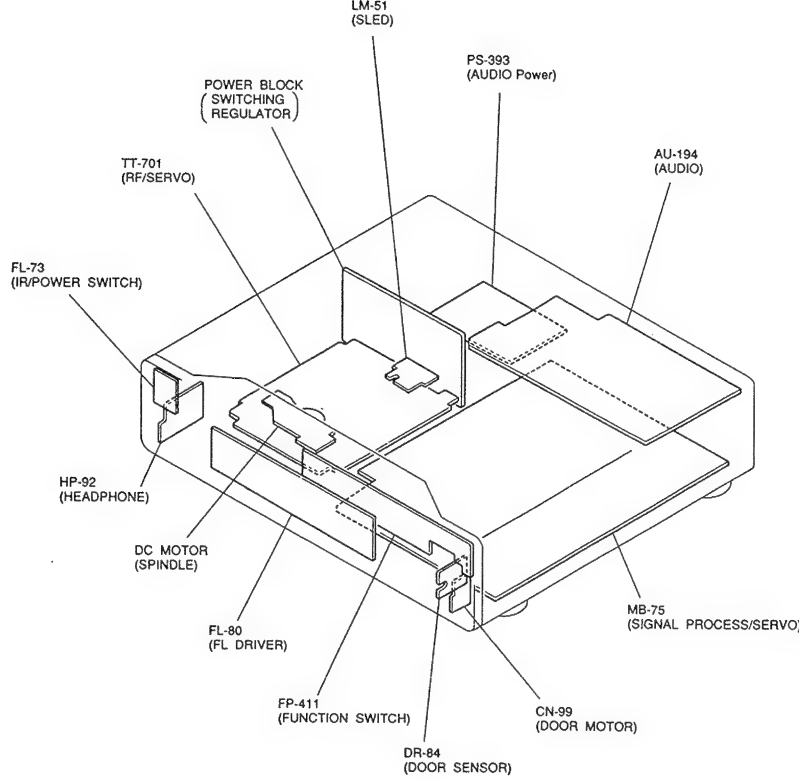


PS-393 BOARD

CN901 A-4
CN902 B-4
CN903 A-3
CN951 C-2
CN952 A-1

D951 C-1
D952 B-2
D953 B-2
D954 C-1
D955 B-1
IC951 A-2
IC953 A-2

21
(21) : E
11
(11) : US/Canadian



5-1. INTERFACE CONTROL PIN FUNCTION (IC021 on MB-75 Board (1/12))

Pin No.	Pin Name	I/O	Function
1,2	CL1, 0	I	Input of sub clock (32kHz)
3,4	GND	–	Ground
5,6	X0–1	I	Input of main clock (8MHz)
7	GND	–	Ground
8	RST	I	Input of RESET signal
9	RESET	O	SRESET (SYSCON)
10	INTMS	O	XINTM S (SYSCON)
11	AUDIO MUTE	O	SAUDIO MUTE (L)
12	IFDIAG	I	DIAG (H)
13	NITSC	O	NTSC (H) /PAL (L)
14,15	N.C.	–	Not used
16	FLCS	O	XFLCS (FL)
17	REF V	I	XREF-V (VSYNC)
18	INTSM	I	XINTSM (SYSCON)
19-24	N.C.	–	Not used
25	POWER CONT	O	POWER-CONT (H)
26	DATA BOUND	O	DATA-BOUND
27	N.C.	–	Not used
28	CMOD	I	CMOD
29	N.C.	–	Not used
30	CGSO	O	CGSO (FL & OSDC)
31	CGCLK	O	CGCLK (FL & OSDC)
32	WSIRCS	I	WSIRCS
33	CGCS	O	CGCS (OSDC)
34	N.C.	–	Not used
35	STATUS	O	STATUS (H)
36	N.C.	–	TSEL (OSDC) Not used
37	STATUS	O	FSEL (OSDC)
38	N.C.	–	TRE (OSDC) Not used
39-48	N.C.	–	Not used
49	VCC	–	Power supply
50-57	N.C.	–	Not used
58	GND	–	Ground

Pin No.	Pin Name	I/O	Function
59-66	N.C.	–	Not used
67	VCC	–	Power supply
68-75	N.C.		Not used
76	CS	I	CS (SYSCON)
77	SI	I	SI (SYSCON)
78	SO	O	SO (SYSCON)
79	CLK	I	CLK (SYSCON)
80-82	N.C.	–	Not used
83	GND	–	Ground
84-87	AD0–3	I	Analog input
88	REGION	I	Input of region identify signal
89	N.C.	I	Input of destination identify signal
90	N.C.	–	Not used
91	AD7	I	Input of BIT-RATE
92	VCC	–	Power supply
93	POWER-FAIL	I	Input of POWER-FAIL
94-98	N.C.	–	Not used
99	BZ	O	Buzzer output
100	VCC	–	Power supply

5-2. DRIVE CONTROL PIN FUNCTION (IC136 on MB-75 Board (3/12))

Pin No.	Pin Name	I/O	Function
1	VCC	–	Power supply
2	PB0/TP8/TIOCA3	O	Peripheral circuits reset signal (L: Reset)
3	DRV INT	O	
4	DRV P CONT	–	12V system power control signal
5–10	N.C.	–	Not used
11	VSS	–	Ground
12	CPDTO	O	Serial data output to each IC
13	SDCS (SO)	O	Serial data output to jig
14	CPDTI	I	Serial data input from each IC
15	SDSC (SI)	I	Serial data input from jig
16	CPCK	O	Serial clock to each IC
17	SCKCS	O	Serial clock to jig
18–21	D0–3	I/O	Data bus 0–3
22	VSS	–	Ground
23–25	D4–6	I/O	Data bus 4–6
26–34	D7–15	I/O	Data bus 7–15
35	VCC	–	Power supply
36–43	A0–7	O	Address bus 0–7
44	VSS	–	Ground
45–50	A8–13	O	Address bus 8–13
51–56	A14–19	O	Address bus 14–19
57	VSS	–	Ground
58	WAIT	I	WAIT signal (fixed to “H”)
59	BREQ	I	Input of bus request
60	BACK	O	Output of bus ACK
61	ϕ	O	Output of system clock (for check)
62	STBY	I	Fixed to “H”
63	RES	I	Input of Reset by SH (L: Reset)
64	NMI	I	Fixed to “L”
65	VSS	–	Ground
66	EXTAL	I	Input of 16.9MHz
67	XTAL	I	Input of 16.9MHz
68	VCC	–	Power supply

Pin No.	Pin Name	I/O	Function
69	AS	O	Address strobe
70	RD	O	Read
71	HWR	O	H_Write
72	LWR	O	L_Write
73–75	MD0–2	I	Operation mode setting (Mode 2)
76	A VCC	–	Power supply
77	VREF	–	Reference voltage
78	TISUM	I	Input of redial skew sensor sum signal
79	HYDET1	I	Input of sled FG2
80	MIRL	I	VCO
81	PI	I	Input of pull-in signal
82	FE	I	Input of focus error signal
83	SLD2+	I	Input of sled offset
84	VCOM	I	Input of VCO adjustment
85	SLD2–	I	Input of sled offset
86	A VSS	–	Ground
87	SCOR	I	CXD2545 address storing request signal
88	DQSY	I	Pull up to “H”
89	SOINT	I	Jitter storing request signal
90	SYS_INT	I	Interrupt request signal from Syscon
91	CDDDET	I	CD detection sensor input
92	VSS	I	Ground
93	TKC	I	Input of sled FG count
94	DFWD	O	Front door control (FWD)
95	DRVS	O	Front door control (RVS)
96	N.C.	–	Not used
97	HFG	I	Input of spindle FG
98	DVDLDON	O	LD ON/OFF control for DVD
99	CDLCON	O	LD ON/OFF control for CD
100	LT MUTE	O	

5-3. EXTENDED OUTPUT PORT0 (IC147 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	SQCK MSK	O	SubQ Read Clock Mask
5	ROM CS	O	Chip Select for EEPROM
6	DA XLD	O	Load Signal for D/A
9	SUBQ XOE	O	SubQ Output Enable
12	XLAT	O	Latch Signal for CXD2545
15	SDEN	O	Serial Output Enable For SSI3720
16	SLD MODE	O	Sled Control change
19	INT CS	O	Serial data forward request

5-5. EXTENDED OUTPUT PORT2 (IC149 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	FG ON	O	Spindle FG Servo (Not used)
5	NST	O	Spindle forced stop (L: Stop) Active only at out of control
6	FHOLD	O	Focus Hold
9	FDWN	O	Focus Gain Down (L: Normal)
12	LOAD ON	O	Loading/Unloading Moter ON/OFF
15	DET ON	O	CD Det Sensor LED ON/OFF
16	LP ON	O	VCO Control
19	MUTE	O	Date output (CXD2545) control

5-4. EXTENDED OUTPUT PORT1 (IC148 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	XLT	O	Latch Signal for RF Pro
5	SOEN	O	Serial Output Enable for RF Pro
6	SCK MSK	O	Serial command transfer clock master
9	SCLK	O	SENS reading clock
12	FJUMP-	O	Focus Jump Pulse
15	FJUMP+	O	Focus Jump Pulse
16	DRV BUSY	O	Communication inhibit request from system controller
19	LOCK MON	O	Spindle LOCK Monitor Out

5-6. EXTENDED OUTPUT PORT3 (IC150 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	TILT/H	O	Tilt Filter change
5	SPGC1	O	Selection of low band boost (H: 12 cm, L: 8 cm)
6	CD/DVD	O	DVD/CD (H: DVD, L: CD)
9	SPGC2	O	Spindle Gain change (L: 0dB, H: 6dB)
12	SPCTL0	O	Spindle Control [SPCTL0: SPCTL1]
15	SPCTL1	O	[0: 0] = control, [0: 1] = not control, [1: 0] = acceleration, [1: 1] = deceleration
16	CLVH	O	Spindle CLVH Control
19	LOPEN	O	Loading Driver Power Enable (H: Brake off)

5-7. EXTENDED INPUT PORT0 (IC151 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	TILT IN	I	Tilt state (Not used)
3	TRAY OUT	I	Tray'out end (H: End)
4	CHUCK	I	Chucking down end (H: End)
5	N. C.	I	Not used
6	N. C.	I	Not used
7	LOCK	I	Good Frame Sync det (H: OK, L: NG)
8	XPNM	I	RF Pro PLL Mode (L: Normal)
9	FOK	I	Focus OK (H: NG, L: OK)

5-8. EXTENDED INPUT PORT1 (IC152 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	PSW2	I	Front Door SW input (Close = [1: 0], Open = [0: 1])
3	PSW1	I	Front Door SW input (Close = [1: 0], Open = [0: 1])
4	FCMPH	I	FEZC High Det
5	FCMPL	I	FEZC Low Det
6	SENS	I	Input of CXD2545 internal information
7	JIG BUSY	I	Serial Busy Signal from JIg
8	INT-SC	I	Serial data forward request (JigH8)
9	ROM-BUSY	I	EEPROM Ready/Busy signal

5-9. D/A CONVERTER (IC722 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
1	VSS	-	Ground
2	HYCNTR	O	Adjustment of hall element output
3	SDCNTR	O	Target sled speed
4	TI OFFSET	O	
5	LOAD/UNLOAD	O	Loading/Unloading Control
6	TI DRIVE	O	For tilt forced movement
7	SDINIT	O	
8	VDD	-	Power supply
9	VCC	-	Power supply
10	A08	O	
11	DO	O	Serial Data Output
12	LD	I	Serial Data Load
13	CLK	I	Serial Clock Input
14	DI	I	Serial Data Input
15	AVCO	O	For VCO adjustment
16	GND	-	Ground

5-10. SYSTEM CONTROL PIN FUNCTION (IC090 on MB-75 Board (2/12))

Pin No.	Pin Name	I/O	Function
1	IRQ6	I	Input of interrupt from CXD1186, CXD8663Q, CXD8669Q
2	IRQ7	I	Input of interrupt from CXD1900
3	VSS	–	Digital ground
4–11	AD0–7	I/O	Data bus AD0-AD7
12	VSS	–	Digital ground
13,14	AD8–9	I/O	Data bus AD8, AD9
15	VCC	–	Digital power supply
16–21	AD10–15	I/O	Data bus AD10-AD15
22	VSS	–	Digital ground
23–30	A0–7	O	Address bus A0-A7
31	VSS	–	Digital ground
32–39	A8–15	O	Address bus A8-A15
40	VSS	–	Digital ground
41,42	A16–17	O	Address bus A16, A17
43	VCC	–	Digital power supply
44–47	A18–21	O	Address bus A18-A21
48	CS0	O	Chip select signal for external ROM
49	CS1	O	Chip select signal for external RAM
50	CS2	–	Not used
51	CS3	O	Chip select signal for RAM common to drive controller
52	VSS	–	Digital ground
53	PA0	O	Not used
54	PA1	O	Output of squeeze mode
55	CS6	O	Output of chip select signal to external device
56	WAIT	I	Input of wait signal
57	WR	O	Output of write signal
58	PA5	O	Output of IF controller serial data control
59	RD	O	Output of read signal
60	PA7	O	Not used
61	VSS	–	Digital ground
62	PA8	O	Output of serial select signal to L chip
63	PA9	O	Output of serial select signal to CXD1914
64	PA10	O	Output of serial select signal to audio DAC
65	PA11	O	Output of error free signal

Pin No.	Pin Name	I/O	Function
66	IRQ0	I	Input of interrupt signal from SP, BFD, drive controller
67	DREQ0	I	Input of DMA request from CK
68	IRQ2	I	Input of VSYNC (FID) interrupt signal
69	IRQ3	I	Input of interrupt signal from CK, DSP5600
70	VCC	–	Digital power supply
71	CK	O	Output of internal clock
72	VSS	–	Digital ground
73	EXTAL	–	20MHz crystal connection pin
74	XTAL	–	20MHz crystal connection pin
75	VCC	–	Digital power supply
76	NMI	–	Not used
77	VCC	–	Digital power supply
78	WDTOVF	–	Not used
79	RES	I	Input of reset signal
80	MD0	I	Input of mode select 0 (fixed to “1”)
81	MD1	I	Input of mode select 1 (fixed to “0”)
82	MD2	I	Input of mode select 2 (fixed to “0”)
83,84	VCC	–	Digital power supply
85	AVCC	–	Analog power supply
86	AVREF	–	Reference power supply
87	PC0	I	Input of DIAG mode select signal
88	PC1	I	Input of EMPH signal from CXD2545
89	PC2	I	Input of request from drive controller
90	PC3	I	Input of request from DSP56000
91	AVSS	–	Analog ground
92	PC4	I	Input of FID signal from CXD1914
93	PC5	I	Input of request from I/F controller
94	PC6	I	Input of control 1
95	PC7	I	Input of control 2
96	VSS	–	Digital ground
97	PB0	O	Output of request to I/F controller
98	PB1	O	Output of request to drive controller
99	VCC	–	Digital power supply
100	PB2	O	Output of clock system switching (DVD/CD)

Pin No.	Pin Name	I/O	Function
101	PB3	O	Output of reset signal to audio DAC
102	PB4	O	Output of reset signal to peripheral device
103	PB5	O	Output of serial select signal to DSP56000
104	PB6	O	Output of HREQ signal latch reset to DSP56000
105	PB7	O	Output of serial select signal to video equalizer
106	VSS	–	Digital ground
107	RxD0	I	Input of serial data from other than CXD1914
108	TxD01	O	Output of serial data to other than CXD1914
109	RxD1	I	Input of serial data from CXD1914
110	TxD1	O	Output of serial data to CXD1914
111	SCK0	O	Output of serial clock to other than CXD1914
112	SCK1	O	Output of serial clock to CXD1914

SECTION 6
TEST MODE

6-1. Starting up Test Mode

With the DVP-S7000 in standby status, press [TIME], [CLEAR], and [POWER] keys on the standard commander in this order. And, the Test mode starts up and the initial menu shown in Figure 1 appears on the video display.

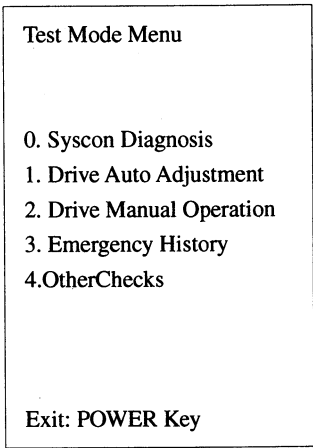


Figure 1 Initial menu

In the Test mode, necessary operations are all done with the keys on standard commander or operation panel.
The test mode can be finished and the set returns to the power off status when the [POWER] key is pressed whichever mode, except during checking of Syscon Diagnosis, you are working in now.

6-2. Syscon Diagnosis

In the Syscon Diagnosis, intermittent blocks such as 0-ff, 500-5ff, a00-fff, f00-fff, 1400-14ff, etc. (address) are checked. All of the operation are done with standard commander keys, and a menu cannot be selected but all items are checked. After result display, you can only select either “continue to next item” or “cancel”, and continue and retry in case of written data error are not available.

If [0] key on standard commander is pressed during initial menu display, the Diagnosis screen as shown in Figure 2 is displayed, and a checking starts from the top of diagnosis check items list sequentially. After a checking started, standard commander keys are accepted while a message or title is blinking, so that you can go to the next job.

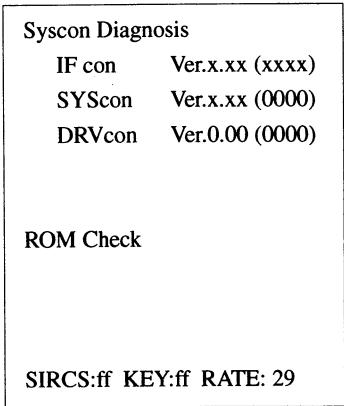


Figure 2

In this mode, ROM revision number (Ver. No.) of each control IC (MPU) and its checksum are displayed. However, Syscon checksum and Drvcon value are obtained in the process of diagnosis check, and therefore they are initially 0.
On the fifth line, an item is displayed, and IF control information is displayed at the bottom though it is not related to a checking of each item.
If Syscon Diagnosis is selected, a checking starts immediately, and the result of initial ROM check and Syscon ROM checksum are displayed as shown in Figure 3.

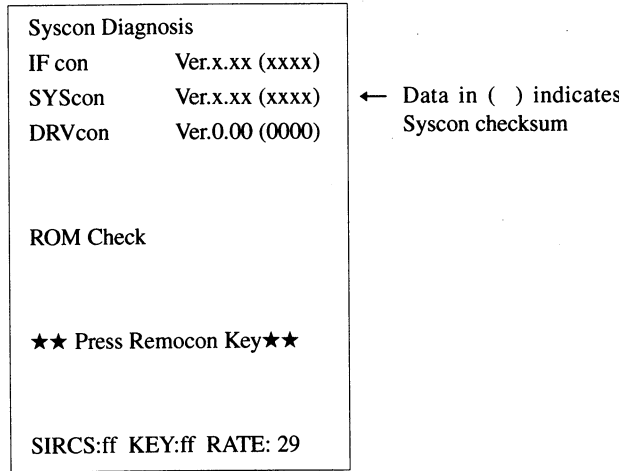


Figure 3

Confirm the result, and to cancel checking, press [RETURN], [MENU], or [POWER]. Or, to continue next checking, press other than these keys.

The ROM revision and checksum of Drvcon are displayed when executing "DrvCon Data Exchange" and "DrvCon EPROM" respectively.
Also, in case of an error, the error code and information are displayed as shown in Figure 4.

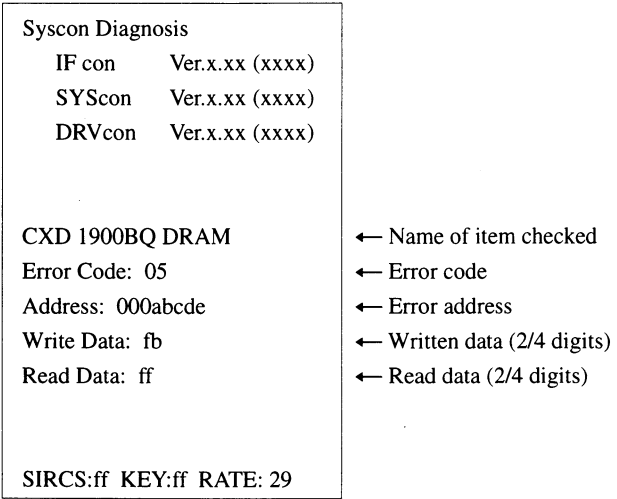


Figure 4

Except error code "05" (write/read data mismatch error), the address and data fields show "0". When a checking is over or cancelled, "Diag OK" or "Diag Error End" message blinks. If a key is pressed here, the test mode initial menu is resumed. The "Diag Error End" is displayed only when the Syscon detects an error, and visual inspection result is out of the display.

6-2-1. General description of checking method

This section describes briefly a checking method for each item in the order of menus.
Numbers in () for respective items are diagnosis item numbers.

(2) Memory

(2-2) Syscon ROM (IC093) check

Calculation of checksum

Calculation range: 0x00000000 - 0x000fffff (at commercial products, 8Mbit ROM)
All 8bit data from address 0 to ROM size are added (checksum), and output as 4-digit hexadecimal number.
In this check, the IC090 (Syscon) itself does not detect an error. The result is displayed on the screen. Compare it with original ROM checksum.

(2-3) Syscon RAM (IC094) check

IC093 (Syscon ROM) → IC094 (Syscon RAM) collating check

Checking range: 0x01000000 - 0x0101ffff

IC093 (Syscon ROM) data (program codes) are transferred in DMA mode in the unit of 64 bytes to the IC094 (Syscon RAM), then they are read every 1 byte and compared with data in IC093. As the Syscon RAM check is made by saving the data into internal RAM (DMA transfer), the data are written and read every 64 bytes, and interruption during that time is completely masked.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed. Select the subsequent processing by pressing a key. As this check is made through DMA transfer, if Repeat is selected, the data are transferred in DMA mode again to the block where this error occurred and a checking is continued from the error address.

(3) Clock

(3-2) Audio clock system output switching (CD side)

I/O output

The audio clock system is switched to the CD side. In this check, the Syscon itself does not detect an error. Observe output signals with an instrument.

(3-3) Audio clock system output switching (DVD side)

I/O output

The audio clock system is switched to the DVD side. In this check, the Syscon itself does not detect an error. Observe output signals with an instrument.

(4) Drvcon

(4-2) Drvcon (IC136) reset check

Hard Reset → DRV BUSY response input

The Hard Reset signal is output, and after cancelling the reset, whether DRV BUSY signal changes from "low" to "high" is checked. The detection timing of DRV BUSY "low" is about 250 msec after the reset is cancelled. Also, whether the signal becomes "high" later is checked.

After confirming "high" or "low" of DRV BUSY signal 250 msec after reset was cancelled, if the signal does not go "high" though about 300 msec elapsed, the reset error 02 is output.

(4-3) Drvcon common RAM (IC138) check

IC093 (Syscon ROM) → IC138 (common RAM) collating check

Checking range: 0x03000001 - 0x03000fff

After confirming that the RAM areas common to Drvcon are not occupied by Drvcon (namely, the contents of common RAM addresses are true), the IC093 (Syscon RAM) codes are copied to the IC138 (common RAM) areas from address 1, then the data are read for checking. If all are same, the IC093 code bits are inverted and checked again. If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

After checking, reset the Drvcon because irregular values are written to the IC138.

If common RAM areas are occupied by Drvcon and they are not opened even after about 2 seconds, the write error 03 is output.

(4-4) Drvcon data exchange check

IC090 (Syscon) → IC136 (Drvcon), IC136 (Drvcon) → IC090 (Syscon) command path check

The path check command is sent from IC090 (Syscon) to IC136 (Drvcon), and as a result, whether the data same as sent data is returned to the IC138 (common RAM) is checked. In the Syscon Diagnosis, only the ROM revision is displayed. If no response is returned from Drvcon or the data are not same, the error code 73 is output.

(4-5) Drvcon interrupt line check

IC136 (Drvcon) → IC090 (Syscon), IC090 (Syscon) → IC136 (Drvcon) interrupt line check

If CXD8663Q check command is sent from IC090 to IC136, the IC136 returns IC181 (CXD8663Q) register read/write command. Receiving this command, the IC090 outputs a response signal implying that the interrupt signal was received, then the IC136 confirms this signal input and writes the Command Done to the IC138 (common RAM).

When the Command Done is not returned even after 1 second, the error code 70 (DRV INT is not detected) is output if the interrupt signal has not been received, or the error code 71 (Drvcon does not recognize SYS INT) is output if the interrupt signal has been received.

Also, upon detection of an error in IC181 (CXD8663Q) by this command, the error code 30 is output.

If DRV INT signal is kept "low", the Syscon repeats an interrupt processing continuously, thus making error display impossible. For this reason, only for this command, the Drvcon returns the DRV INT signal to "high" even if SYS INT is not detected. (The Syscon makes judgment whether Command Done is returned or not.)

Here, if the Syscon makes no response, the DRV INT signal itself will be faulty.

(4-6) Drvcon SRAM check

IC090 (Syscon) → IC136 (Drvcon) check request command

The SRAM check command is sent from IC090 to IC136, and its response result is displayed.

In case of an error, the error information of Drvcon is read, then the error code 05, error address, written data, and read data are displayed.

(4-7) EEPROM check

IC090 (Syscon) → IC136 (Drvcon) check request command

The EEPROM check command is sent from IC090 to IC136, and its response result is displayed.

The error code 74 when IC139 (EEPROM) write signal is not ready, or error code 05 when written data and read data are not same, error address, written data, and read data are displayed.

(4-8) RF Processor check

IC090 (Syscon) → IC136 (Drvcon) check request command

The RF processor check command is sent from IC090 to IC136, and its response result is displayed.

In case of an error in IC770 (RF processor), the error code 76 is output.

(4-9) CXD2545 RAM check

The CXD2545 check command is sent from IC090 to IC136, and its response result is displayed.

In case of an error in IC717 (CXD2545), the error code 75 is output.

(4-10) Drvcon ROM check

IC090 → IC136 check request command

The EPROM check command is sent from IC090 to IC136.

The Drvcon calculates checksum of IC140 (EPROM), and returns its result and the checksum value is displayed, if there is no error. Compare the result displayed on the screen with the checksum of original EPROM.

(4-11) VCO offset automatic adjustment

IC090 → IC136 check request command

The VCO offset automatic adjust command is sent from IC090 to IC136.

If automatic adjustment failed, the error code 77 is output.

(5) Data supply system

(5-2) IC217 (CXD8598R) reset check

Write to register → Hard reset → Read from register

Registers to be checked: TSC2 (0x06200011)
TSC1 (0x06200012)
TSC0 (0x06200013)

Data other than 0 are written to readable and writable registers in IC217 (CXD8598R), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-3) IC217 (CXD8598R) register check

Register write → Register read collating check

Registers to be checked: TSC2 (0x06200011)
TSC1 (0x06200012)
TSC0 (0x06200013)

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-4) IC181 (CXD8663Q) reset check

Write to register → Hard reset → Read from register

Register to be checked: INTRMASK (0x22)

Data other than 0 are written to readable and writable register in IC181 (CXD8663Q), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-5) IC181 (CXD863Q) register check

Register write → Register read collating check

Register mask data to be checked

0x20	0xbf
0x22	0xff
0x25	0xff
0x26	0xff
0x27	0xff

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. However, some bits that cannot be written are masked. If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-6) IC181 (CXD8663Q) DRAM check

ROM → IC181 (CXD8663Q) → DRAM → IC181 (CXD8663Q) read collating check

Checking range: 0x00000000 - 0x0007ffff

ROM pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (ROM) address are returned. A reading check is made after data are written to all areas. If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-7) IC181 (CXD8663Q) interrupt line check

IC093 (Syscon ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R)

DVD bit stream data stored in IC093 are transferred to the IC182 (external DRAM of IC181), and the SD bus sector header detect interruption is checked, which occurs by flowing data to the IC217 (CXD8598R). If the header of SD bus sector in IC181 (CXD8663Q) is not detected, the error code 31 is output.

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

(5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check

IC093 (Syscon ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R)

DVD bit stream data stored in IC093 are transferred to the IC182 (external DRAM of IC181), and IC217 (CXD8598R) transfer end interruption is checked, which occurs by flowing data to the IC217 (CXD8598R). If the transfer end interruption is not detected, the error code 21 is output.

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

(5-9) IC184 (CXD8669AQ) reset check

Write to register → Hard reset → Read from register

Register to be checked: SYSINI (0xe1)

Data other than 0 are written to readable and writable register in IC184 (CXD8669AQ), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-10) IC184 (CXD8669AQ) register check

Register write → Register read collating check

Register mask data to be checked

0xe0	0x80
0xe1	0xff
0xe4	0xc0
0xe5	0xc0
0xe6	0xf8

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. However, some bits that cannot be written are masked. If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-11) IC216 (CXD1186) reset check

Write-to register → Hard reset → Read from register

Registers to be checked: DADRC_L (0x06380007)
DADRC_H (0x06380008)
HXFRC_L (0x06380009)
HXFRC_H (0x0638000A)
HADRC_L (0x0638000B)
HADRC_H (0x0638000C)

Data other than 0 are written to readable and writable register in IC216 (CXD1186), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-12) IC216 (CXD1186) register check

Register write → Register read collating check

Registers to be checked: DADRC_L (0x06380007)
DADRC_H (0x06380008)
HXFRC_L (0x06380009)
HXFRC_H (0x0638000A)
HADRC_L (0x0638000B)
HADRC_H (0x0638000C)

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times.

If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-13) IC216 (CXD1186) SRAM check

IC093 (Syscon ROM) → IC216 (CXD1186) → IC215 (SRAM)
→ IC216 read collating check

Checking range: 0x00000000 - 0x00007fff

IC093 ROM pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (ROM) address are returned. A reading check is made after data are written to all areas. After SRAM write addresses are set, error code 03 when writing is not ready, or after read addresses are set, error code 04 when reading is not ready is output, then a check is finished.

Also, if compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed.

(5-14) IC216 (CXD1186) to IC217 (CXD8598R) connection check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R)

VCD bit stream data stored in IC093 are transferred to the IC215 (external SRAM of IC216), and IC217 (CXD8598R) transfer end interruption is checked, which occurs by flowing data to the IC217 (CXD8598R).

If the transfer end interruption is not detected, the error code 21 is output.

Further, SCR is read to check its value. If the value is not the one in sector transferred, the error code 22 is output.

(6) Video Decoder

(6-2) IC281 (CXD1900BQ) reset check

Write to register → Hard reset → Read from register

Register to be checked: PLYMOD (0x06080002)

Data other than 0 are written to readable and writable register in IC281 (CXD1900BQ), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(6-3) IC281 (CXD1900BQ) register check

Register write → Register read collating check

Register to be checked: PLYMOD (0x06080002)

Incrementing 1 each starting from 0, data are written to readable and writable register, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. However, some bits that cannot be written are masked.

If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(6-4) IC281 (CXD1900BQ) DRAM check

IC093 (ROM) → IC281 → IC280, IC282 → NIC284 (DRAM)
→ IC281 read collating check

Checking range: 0x00000000 - 0x0003ffff (data bus width = 64bits)

IC093 ROM pattern is copied to all areas to be checked. Because of large DRAM capacity, each time 256 bytes are copied, 255 bytes of original (IC093) address are returned. A reading check is made after data are written to all areas.

The error code 03 when writing is not ready, or error code 04 when reading is not ready is output, then a check is finished.

Also, if compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed. However, the data are displayed every 8 bits, though the bus width of IC281 (CXD1900BQ) is 64 bits. Namely, actual address is the displayed value shifted by 3 bits to the right where lower 3 bits indicate the byte position.

For example, in the case of display shown below:

IC281 (CXD1900BQ) DRAM

Error Code: 05

Address: 000abcde

Write Data: fb

Read Data: ff

If displayed value 0 0 0 A B C D E is expressed with binary number, 0000 0000 0000 1010 1011 1100 1101 1110.

If it is shifted by 3 bits to the right, 0000 0000 0000 0001 0101 0111 1001 1011 110. That is, assuming that the top of address 0 0 0 1 5 7 9 B in hexadecimal notation is 0th byte, the 6th byte is erroneous such as FB → FF (as for the bit position in the same manner, the 53rd bit is 0 → 1, assuming that MSB is 0th and LSB is 63rd).

(6-5) CXD1914 VSync check

IC475 (CXD1914Q) VSync interrupt cycle measurement

The VSync interruption is enabled for about 160msec, and the number of VSync interruption from NTSC encoder is counted. The operation is normal if the count is more than 9 times and less than 11 times. If out of this range, the error code 41 is output.

The SC11 interruption is also enabled, as the NTSC encoder processing is required due to VSync interruption.

(6-6) IC281 (CXD1900BQ) VSync interrupt line check

IC281 (CXD1900BQ) VSync interrupt detection check

The VSync interruption of IC281 (CXD1900BQ) is enabled and whether interruption is made is checked. If no interruption is made though 2 seconds elapsed, the error code 41 is output.

(6-7) IC217 (CXD8598R) to IC281 (CXD1900BQ) connection check

IC093 → IC216 → IC215 → IC216 → IC217 → IC281 → IC280,
IC282 ~ NIC284

VCD bit stream data stored in IC093 are transferred via IC216 (CXD1186) to the IC215 (SRAM), and the sequence header interruption and transfer end interruption from IC281 are checked, which occur by flowing data to the IC281 (CXD1900BQ) via IC216 (CXD1186) and IC217 (CXD8598R).

The error code 21 when transfer end interruption for transferred sectors is not detected, or error code 42 when sequence header interruption is not detected is output.

(7) Subpictures

(7-2) IC312 (CXD8600R) reset check

Write to register → Hard reset → Read from register

Register to be checked: WRITE_READ_TOP (0x06000050)

Data other than 0 are written to readable and writable register in IC312 (CXD8600R), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(7-3) IC312 (CXD8600R) register check

Register write → Register read collating check

Registers to be checked: VB_LUMINANCE (0x06000050)

VB_LUMINANCE+1
VB_LUMINANCE+2
VB_LUMINANCE+3
VB_LUMINANCE+4
VB_LUMINANCE+5
VB_LUMINANCE+6
VB_LUMINANCE+7
VB_LUMINANCE+8
VB_LUMINANCE+9
VB_LUMINANCE+A
VB_LUMINANCE+B
VB_LUMINANCE+C
VB_LUMINANCE+D
VB_LUMINANCE+E
VB_LUMINANCE+F

The values written to the registers in IC312 (CXD8600R) are read from the same address WRITE_READ_TOP in any registers. Therefore, the Diagnosis function cannot read data after data were written to all registers. A checking is made by reading every register. If compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed.

(7-4) IC312 (CXD8600R) SRAM check

IC093 (ROM) → IC312 (CXD8600R) → IC313, IC319 (SRAM) → IC312 read collating check

Checking range: 0x00000001 - 0x0003ff000

The IC312 (CXD8600R) cannot designate read/write address of SRAM. Internal pointer manages the addresses automatically. Accordingly, the reading order is same as the writing order.

IC093 pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (IC093) address are returned. A reading check is made after data are written to all areas. As the Syscon Diagnosis is a simplified check, actual check range is 1/5 of the above mentioned checking range.

Unlike other RAM checks, the addresses are not skipped. The address 0 in each area has specific meaning, and therefore arbitrary data cannot be written.

After the fixed data is written to address 0, a check starts from address 1, and the last 255 bytes are not checked because of a complicated program.

If compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed.

However, IC312 (CXD8600R) cannot designate an address, and the repeat check is ignored.

Also, in case of an error in VB, 0x10000000 is added to the address for explicit discrimination.

(7-5) IC217 (CXD8598R) to IC312 (CXD8600R) connection check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC312 (CXD8600R)

The bit stream data including subpictures stored in IC093 (ROM) are transferred to the IC182 (external DRAM of IC181). Then, SP Arrive signal from IC312 is checked, which is generated by flowing the data to the IC312 (CXD8600R) via IC217 (CXD8598R).

The error code 61 is output when data arrival cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

(7-6) IC312 (CXD8600R) interrupt line check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC312 (CXD8600R)

The bit stream data including subpictures stored in IC093 (ROM) are transferred to the IC182 (external DRAM of IC181). Then, the PTS interrupt is checked, which occurs by flowing the data to the IC312 (CXD8600R) via IC217 (CXD8598R).

The error code 62 is output when an interruption cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

(8) Video Related

(8-2) Video encoder check (color bar output)

The color bar is turned on for the NTSC encoder color bar enable command IC475 (NTSC encoder).

In this check, the Syscon itself does not detect an error.

Confirm the video display screen.

(8-3) Video output check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC281 (CXD1900BQ) → Video signal output

The bit stream data of still picture stored in IC093 (ROM) are transferred to the IC215 (SRAM of IC216), then the picture is displayed on the video screen by flowing data to the IC281 (CXD1900BQ) via IC217 (CXD8598R). If an error is present in any path, that code is output and a checking is finished.

If no error is found, the controller waits for key entry.

Check the video display screen.

(8-4) IC310 (CXD8602Q) check (letter box output)

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC281 (CXD1900BQ) → IC310 (CXD8602Q) → Video signal output

The bit stream data of still picture stored in IC093 (ROM) are transferred to the IC215 (SRAM of IC216), then the picture is displayed on the video screen by flowing data to the IC281 (CXD1900BQ) via IC217 (CXD8598R). In such a case, the letter box on command is output on the IC310 (CXD8602Q).

If no error is found, the controller waits for key entry.

Check the video display screen.

(8-5) Video equalizer check (brightness control)

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC281 (CXD1900BQ) → IC317 (CXD8664Q) → Video signal output

The bit stream data of still picture stored in IC093 (ROM) are transferred to the IC215 (SRAM of IC216), then the picture is displayed on the video screen by flowing data to the IC281 (CXD1900BQ) via IC217 (CXD8598R).

If no error is found, the brightness change command is sent to the IC317 (CXD8664Q). The controller waits for key entry after changing the brightness twice.

Confirm that the brightness of video display screen changes.

(8-6) Subpicture output check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC312 (CXD8600R) → Video signal output

The bit stream data including subpicture stored in IC093 (ROM) are transferred to the IC312 (CXD8600R) via IC181 (CXD8663Q) and IC217 (CXD8598R), and the picture is displayed on the video screen unless an error is found.

Check the video display screen.

(8-7) S-terminal output check (0V)

I/O output

Make S-terminal output potential 0V.

In this check, the Syscon itself does not detect an error.

Observe the potential at the S-terminal with an instrument.

(8-8) S-terminal output check (5V)

I/O output

Make S-terminal output potential 5V.

In this check, the Syscon itself does not detect an error.

Observe the potential at the S-terminal with an instrument.

(8-9) S-terminal output check (2.5V)

(9) Audio Related

(9-2) IC380 (CXD8603R) reset check

Write to register → Hard reset → Read from register

Register to be checked: RAADRS (0x06100004)

Data other than 0 are written to readable and writable register in IC380 (CXD8603R), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

Though this register has 16-bit length, MSB is always 0.

(9-3) IC380 (CXD8603R) register check

Register write → Register read collating check

Register to be checked: RAADRS (0x06100004)

Incrementing 1 each starting from 0, data are written to readable and writable register, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 32768 times.

If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed. Because of 16-bit length, 4-digit data is displayed (however, MSB is always 0).

(9-4) IC380 (CXD8603R) SRAM check

IC093 (ROM) → IC380 (CXD8603R) → IC383 (SRAM) → IC380 read collating check

Checking range: 0x00000000 - 0x00007fff

IC093 (ROM) pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (IC093) address are returned. A reading check is made after data are written to all areas.

The data write/read to IC383 (SRAM) are executed every 256 bytes using the direct access function of the IC380 (CXD8603R). If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(9-5) IC217 (CXD8598R) to IC380 (CXD8603R) connection check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC380 (CXD8603R) SRAM read collating check

The bit stream data of MPEG-AUDIO stored in IC093 (ROM) are transferred by only one sector to the IC215 (external SRAM of IC216), then they are flown to the IC380 (CXD8603R) via IC217 (CXD8598R).

If no error is found, the data are transferred to the SRAM in IC380 (CXD8603R) and compared with original ROM data.

The first 512 bytes in code buffer are read from IC380 (CXD8603R) SRAM into internal RAM of CPU, and whether 256 byte pattern after 12th bytes in effective area of MPEG-AUDIO bit stream data stored in ROM is contained is searched. If not found, the pattern to be searched is shifted one byte each, and a searching is repeated maximum 256 times. The check passed if 256 bytes are same successively.

If same pattern is not found, the error code 10 is output.

(9-6) Audio decoder boot check

AC-3 codes are downloaded to the audio decoder.

The error code 50 if download is not terminated successfully, or error code 51 if AC-3 codes downloading failed is output.

When an error occurred here, the subsequent audio related diagnosis may be rejected, resulting in unconditional output of error code 50.

(9-7) IC380 (CXD8603R) interrupt line check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC380 (CXD8603R)

The bit stream data including Navi Pack stored in IC093 (ROM) are transferred to the DRAM of IC181 (CXD8663Q). Then, the Navi Ready interruption is checked, which occurs by flowing the data to the IC380 (CXD8603R) via IC217 (CXD8598R).

The error code 55 is output when an interruption cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

(9-8) DREQ/NCST check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC380 (CXD8603R) read data pattern check

The bit stream data including Navi Pack stored in IC093 (ROM) are transferred to the DRAM of IC181 (CXD8663Q). Then, the data are flown to the IC380 (CXD8603R) via IC217 (CXD8598R). The error code 55 is output when Navi Ready interruption cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

If no error is found, the Navi Pack transferred to the SRAM in IC380 (CXD8603R) is read for checking.

The error code 10 is output if the data are not same as original bit stream data.

(9-9) MPEG audio digital output check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC380 (CXD8603R) → Digital Audio I/F audio signal output

The bit stream data of MPEG-Audio stored in IC093 (ROM) are transferred to the IC216 (CXD1186). Then, the data are flown to the Digital Audio Interface via IC217 (CXD8598R) and CK to regenerate audio signals.

For the data, audio frequencies are different between left and right channels. Using left and right channels mixing function, the same stream is checked three times in the order of left channel, right channel, and both channels on.

In this diagnosis, the kind of expected errors is many because of complicated paths, but the diagnosis is finished upon detection of an error.

Confirm the content of error from the error code list.

If no error is detected, a sound is generated three times, then a message is output and the controller waits for key entry.

(9-10) MPEG audio analog output check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → CK → Analog Audio I/F audio signal output

The bit stream data of MPEG-Audio stored in IC093 (ROM) are transferred to the IC216 (CXD1186). Then, the data are flown to the Analog Audio Interface via IC217 (CXD8598R) and CK to regenerate audio signals.

For the data, audio frequencies are different between left and right channels. Using left and right channels mixing function, the same stream is checked three times in the order of left channel, right channel, and both channels on.

In this diagnosis, the kind of expected errors is many because of complicated paths, but the diagnosis is finished upon detection of an error.

Confirm the content of error from the error code list.

If no error is detected, a sound is generated three times, then a message is output and the controller waits for key entry.

(9-11) Audio attenuator check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC380 (CXD8603R) → Analog Audio I/F audio signal output

The bit stream data of MPEG-Audio stored in IC093 (ROM) are transferred to the IC216 (CXD1186). Then, the data are flown to the Analog Audio Interface via IC217 (CXD8598R) and IC380 (CXD8603R) to regenerate audio signals.

In such a case, DAC attenuation value is set to 1/4 of normal value to lower the volume.

For the data, audio frequencies are different between left and right channels. Using left and right channels mixing function, the same stream is checked three times in the order of left channel, right channel, and both channels on.

In this diagnosis, the kind of expected errors is many because of complicated paths, but the diagnosis is finished upon detection of an error.

Confirm the content of error from the error code list.

If no error is detected, a sound is generated three times, then a message is output and the controller waits for key entry.
Check if the volume level becomes lower (about half) than that in (9-10).

(9-12) AC-3 audio output check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC380 (CXD8603R) → Audio signal output

The bit stream data including AC-3 audio stored in IC093 (ROM) are transferred to the DRAM of IC181 (CXD8663Q). Then, the data are flown to the IC380 (CXD8603R) via IC217 (CXD8598R) to regenerate audio signals.

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

This diagnosis turns on all channels to turn on both analog and digital outputs.

If no error is detected, a sound is generated, then a message is output and the controller waits for key entry.

O Diagnosis Error code list

01: A mode not supported was selected
02: Reset error
03: Data write error
04: Data read error
05: Written and read data are not same

10: Data transfer error between chips
12: Stop by time out

21: IC217 (CXD8598R) transfer end interrupt is not detected
22: IC217 (CXD8598R) SCR not same

30: Drvcon detects an error in IC181 (CXD8663Q)
31: IC181 (CXD8663Q) SD bus sector header is not detected

41: Vsync interrupt is not detected
42: Sequence header is not detected

50: Audio related chips initialize error
51: Audio stream change error
52: Audio decoder is not in play mode
53: Audio decoder is not in stop mode
54: IC380 (CXD8603R) chip PTS is not detected
55: IC380 (CXD8603R) chip NAVI is not detected
56: No data arrives at IC380 (CXD8603R) chip code buffer
57: No data in IC380 (CXD8603R) chip code buffer is consumed

61: No sub-picture data arrives
62: Sub-picture PTS is not detected

70: DRV INT is not detected
71: Drvcon does not recognize SYS INT
72: Drvcon does not make a response
73: Drvcon communication data error
74: Drvcon EEPROM busy time out
75: Drvcon CXD2545 NG
76: Drvcon RF processor NG
77: Drvcon VCO preset NG

90: Error judged by inspector
91: Check of this item is cancelled by key entry
92: Check of all items is cancelled by key entry

99: Other errors

6-3. Drive Auto Adjustment

The drive can be automatically adjusted, except disc change and tangential skew adjustment. For a disc, use the disc for adjustment. In case of abnormality, press the [stop] key to stop adjustment. If the drive does not stop, prevent secondary failure by taking proper action such as disconnection of the power cable. This adjustment should be made after repair is finished and no trouble is present in the drive.

A trouble, if present, causes NG and the adjustment to be aborted. As the secondary failure could occur, perform automatic adjustment after the drive is completely repaired.

With the initial menu displayed, press [1] on standard commander, and the screen as shown in Figure 5 will appear.

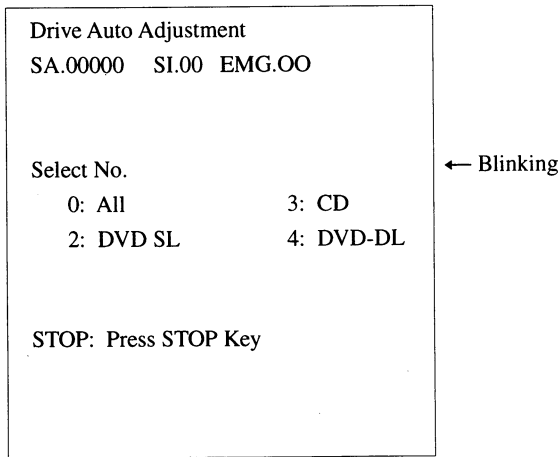


Figure 5

If "All" is selected, the screen shown in Figure 6 is displayed.

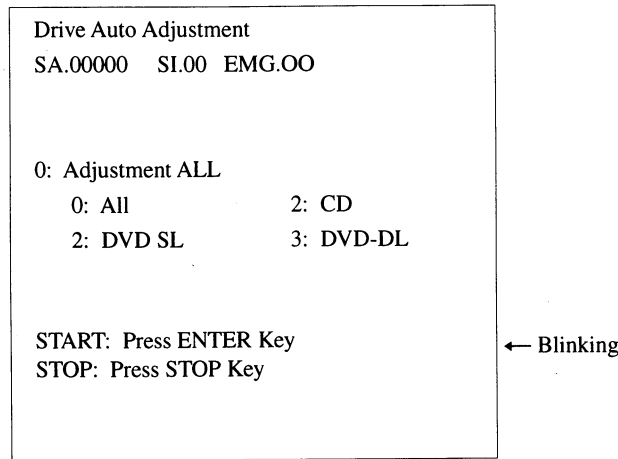


Figure 6

The tray opens after the ENTER key is pressed and the initialization is finished. Then, place the DVD_SL disc for adjustment. Press the ENTER key to start adjustment. During adjustment, the tangential skew adjustment screen is displayed. Make this adjustment only when the pickup was replaced.

As for adjustment, rotate the T-SKEW adjusting screw on the pickup so that the displayed jitter becomes minimum (CCW makes jitter smaller). Avoid extreme rotation or interference of screwdriver with the disc. After adjustment, a message to apply a screw locking agent will be displayed if jitter value is within the specification. Then, apply a drip of locking agent to the recess of screw. Hence, change discs following the given messages on OSD, and the adjustment is finished if there is no problem.

Note that if "All" is selected, the data of previous adjustment are erased and initial values are set.

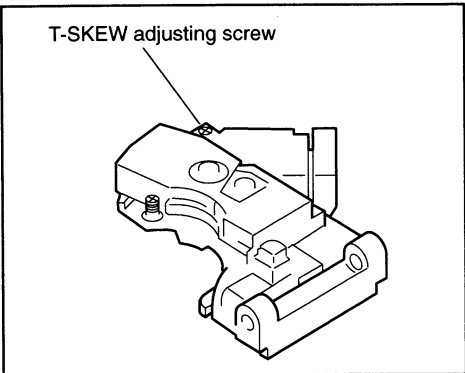
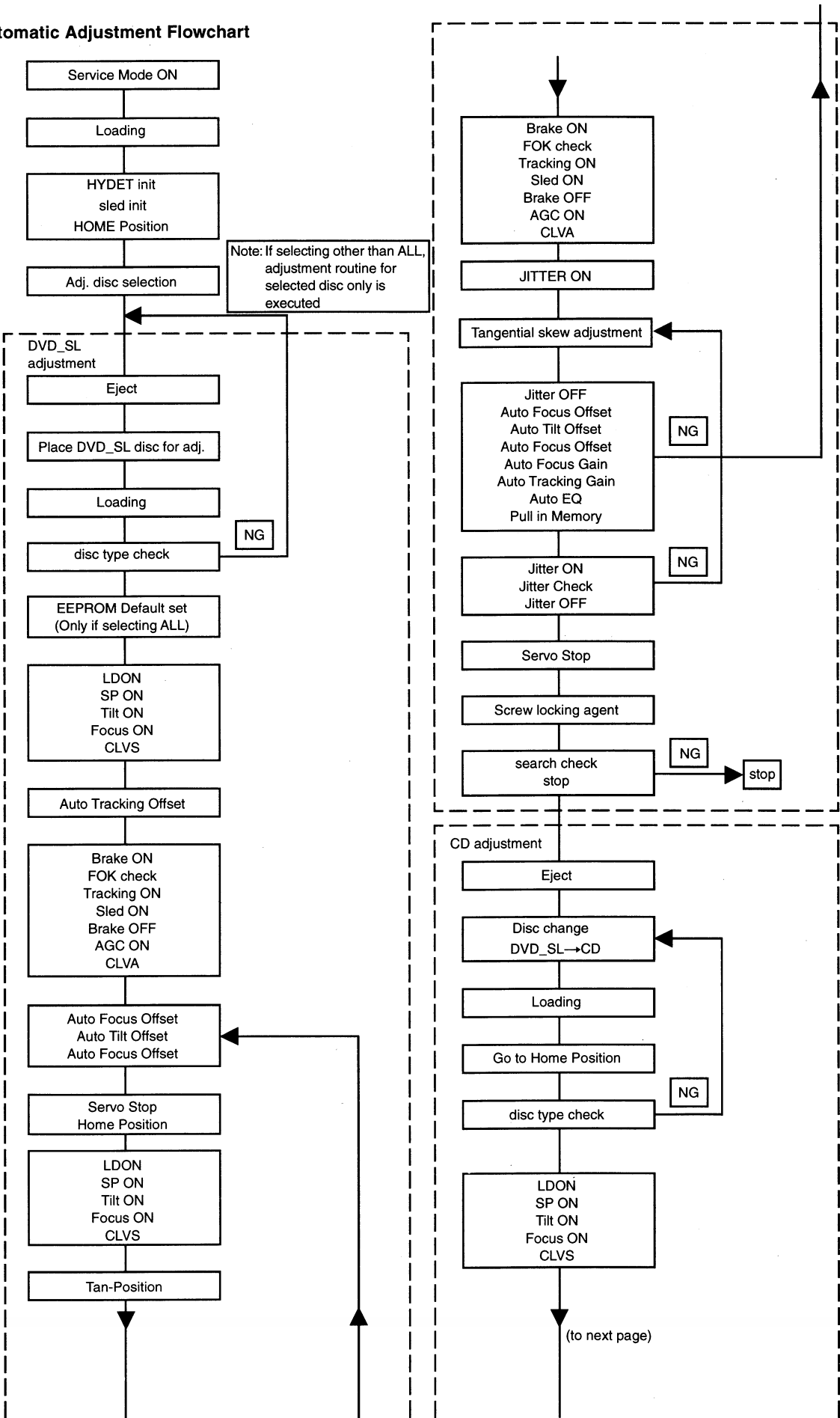


Figure 7

Drive Automatic Adjustment Flowchart



6-4. Drive Manual Operation

In performing manual operation, observe the following points:
Select correct disc type on the Disc Type screen.
First, select “7. Check” and execute “4. Hydet init” and “5. Sled init”. (See Figure 9)
With the initial menu displayed, if [2] on standard commander is pressed, the screen shown in Figure 11 is displayed.
In case of abnormality, press [stop] immediately to stop operation and turn off the power.
Do not execute Auto Adjust while executing FG Pause.
Also, as these commands are not protected, take care not to press wrong key.

6-4-1. Drive Manual Operation Menu Screen

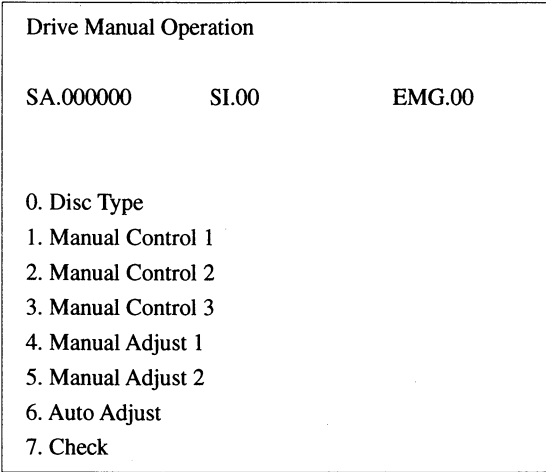


Figure 8

This screen provides a menu for manual operation, and you can go directly to each screen from here. To return to this screen from each screen, press the RETURN key.
For switching between respective screens, use the CLEAR key.

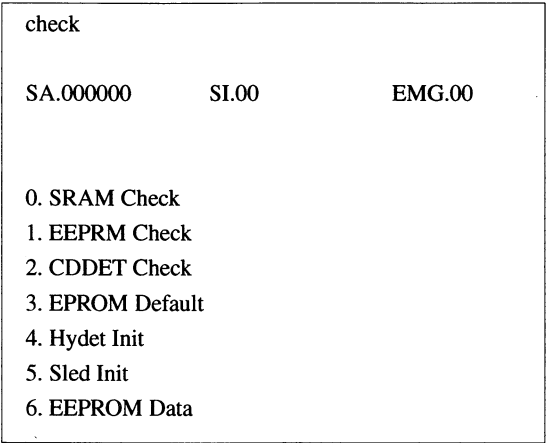


Figure 9

6-4-2. Disc Type

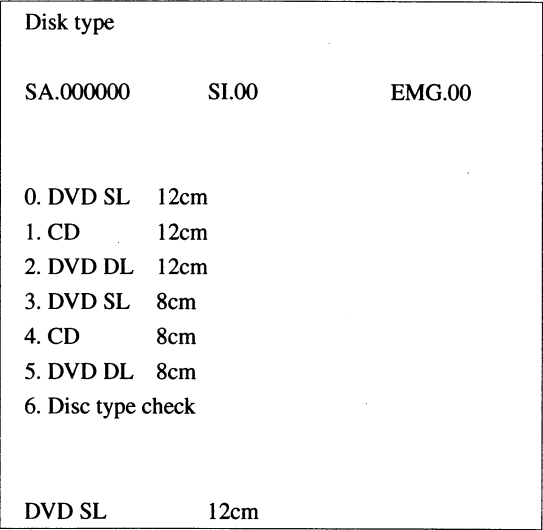


Figure 10

On this screen, select the type of disc used.
“6. Disc type check” judges the disc loaded. Confirm that judgment result meets the loaded disc type.
Judgment may fail if adjustment is not made yet immediately after EEPROM Default Set. The CD which is not cut up to the CD/VDV detection sensor position is judged as DVD. The optical system will be damaged if other disc is loaded after selecting DVD DL.

6-4-3. Manual Control 1

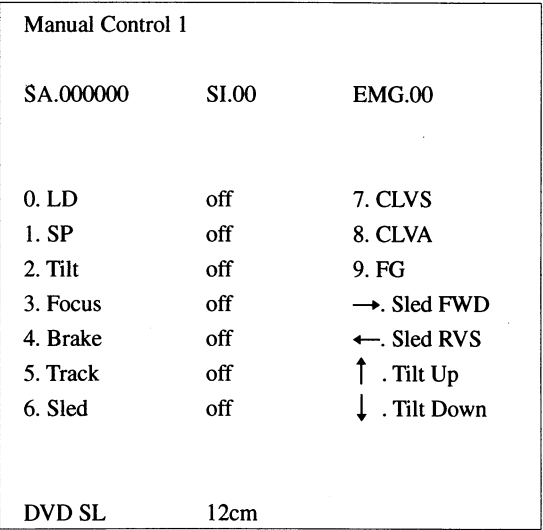
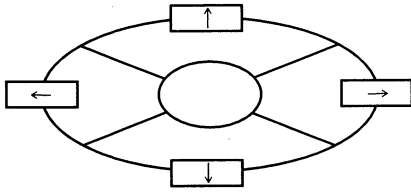


Figure 11

On this screen, turn on/off servo operation items necessary for playing.
Normally, turn on the items from 1 sequentially, and normal trace is executed at CLVA. For the Brake, turn it off after turning on the Sled. During normal operation, AGC is turned on.



- 0. LD : Turn on/off the laser diode.
- 1. SP : Turn on/off the spindle.
At SP ON, the spindle runs in constant velocity mode.
- 2. TILT : Turn on/off the tilt servo.
- 3. Focus : Focus searching is executed and focus is turned on.
Operation is terminated if focus is not turned on after focus search is retried about 3 times.
- 4. Brake : Turn on/off the tracking brake.
If turning on the tracking, turn on the brake.
Also, turn off the brake during tracing.
- 5. Track : Turn on/off the tracking servo.
- 6. Sled : Turn on/off the sled servo.
- 7. CLVS : Spindle rough servo.
- 8. CLVA : Spindle normal servo.
- 9. FG : Spindle in constant velocity mode
- . : Move the sled system outside.
Perform this with the tracking turned off.
- ←. : Move the sled system inside.
Perform this with the tracking turned off.
- ↑. : Move the tilt system up.
- ↓. : Move the tilt system down.

6-4-4. Manual Control 2

Manual Control 2		
SA.000000	SI.00	EMG.00
0. AGC	off	5. FJ0 → 1
1. Pause	off	6. FJ1 → 0
2. FCS. Srch	off	7. LJ0 → 1
3. Defect	off	8. LJ1 → 0
4. Tilt_H	off	
DVDDL	12cm	

Figure 12

This screen will be used mainly for layer jump control.
Confirm the sector information (SI) so as not to mistake layer jump direction of DVD_DL.
The layer is 0 when SI is even number, or layer is 1 when odd number.

Wrong jump direction causes OPT failure.

- 0. AGC : Turn on/off focus error auto gain control on pull-in level.
- 1. Pause : Pause is made by executing track jump once per revolution.
- 2. FCS.Srch : The focus drive system is checked by applying same voltage to the focus drive as that in focus search.
- 3. Defect : Turn on/off defect.
- 4. Tilt H : Increase tilt gain.
- 5. FJ0 → 1 : After layer jump L0 → L1, tracking loop is not turned on.
- 6. FJ1 → 0 : After layer jump L1 → L0, tracking loop is not turned on.
- 7. LJ0 → 1 : After layer jump L0 → L1, tracking loop is turned on.
- 8. LJ1 → 0 : After layer jump L1 → L0, tracking loop is turned on.

6-4-5. Manual Control 3

Manual Control 3		
SA.000000	SI.00	EMG.00
0. FWD	ITJ	5. Eject
1. RVS	ITJ	6. Load
2. FWD	500TJ	7. Door Open
3. RDS	500TJ	8. Door Close
4. Home		
DVD SL	12cm	

Figure 13

On this screen, track jump, etc. are executed.

- 0. FWD 1TJ : Jump one track forward.
- 1. RVS 1TJ : Jump one track reversely.
- 2. FWD 500TJ : Jump 500 tracks forward (fine search).
- 3. RVS 500TJ : Jump 500 tracks reversely (fine search).
- 4. HOME : Move to home position.
- 5. Eject : Eject disc (not including door open). Execute this with the door left open.
- 6. Load : Load disc (not including door close)
- 7. Door Open : Open the front panel door.
- 8. Door Close : Close the front panel door. Execute this in the loading completed status.

6-4-6. Manual Adjust 1

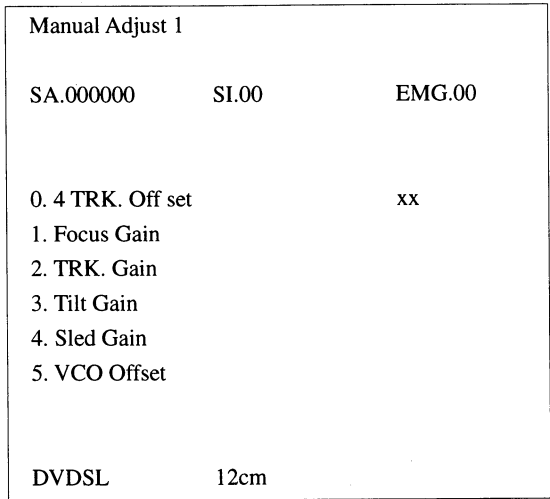


Figure 14

On this screen, manual adjustment can be made where jitter measurement is not executed.

- 0. TRK Offset: Adjust tracking offset.
- 1. Focus Gain : Adjust focus gain.
- 2. TRK Gain : Adjust tracking gain.
- 3. Tilt Gain : The tilt gain is fixed, and no adjustment is made.
- 4. Sled Gain : Do not adjust this.
- 5. VCO Offset: Set VCO control voltage.

6-4-7. Manual Adjust 2

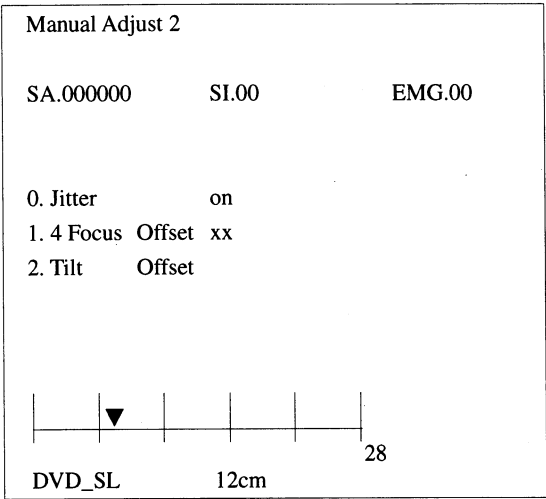


Figure 15

On this screen, manual adjustment can be made where jitter measurement is executed.

- 0. Jitter : Turn on/off jitter measurement. Jitter will not be measured unless the drive runs at CLVS or CLVA.
- 1. Focus Offset : Adjust focus offset.
- 2. Tilt offset : Adjust tilt offset.

6-4-8. Auto Adjust

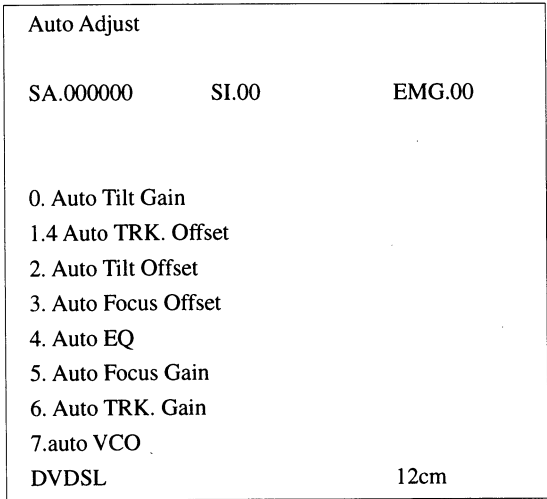


Figure 16

On this screen, each item can be automatically adjusted individually.

Note, however, that there are some restrictions.

- 0. Auto Tilt Gain : Adjust tilt gain. Adjusted result is not reflected on the ROM. Executed this at least with LD and Tilt turned on. (Not used at present)
- 1. Auto TRK Offset : Adjust tracking offset automatically. Adjusted result is reflected on the ROM. Turn off tracking with the Focus turned on. Do not execute this at outside track because pickup moves outside. It is recommended to turn on CLVS.
- 2. Auto Tilt Offset : Adjust tilt offset automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on. If NG, retry this after focus offset and tangential skew are adjusted.
- 3. Auto Focus Offset : Adjust focus offset automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on. If NG, retry this after tilt offset and tangential skew are adjusted.
- 4. Auto EQ : Adjust RF equalizer properly. Adjusted result is not reflected on the ROM. Execute this with CLVA turned on.
- 5. Auto Focus Gain : Adjust focus gain automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on if possible. If NG, the system will be defective, and repair it.
- 6. Auto TRK gain : Adjust tracking gain automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on if possible. If NG, the system will be defective, and repair it.
- 7. Auto VCO : Adjust VCO voltage. Adjusted result is reflected on the ROM. Execute this with all items turned OFF.

6-4-9. Check

check		
SA.000000	SI.00	EMG.00
0. SRAM Check		
1. EEPRM Check		ok
2. CDDET Check		(ok)
3. EEPROM Default set		(CD)
4. Hydet Init		(set)
5. Sled Init		(OK)
6. EEPROM Data		(OK)
DVDSL		
		12cm

Figure 17

On this screen, various checking can be made. Note, however, that some items such as EEPROM Default set are not recoverable.

- 0. SRAM check : Check communication between H8 and SRAM (CXK58257).
- 1. EEPROM check : Check communication between H8 and EEPROM (AK6420).
- 2. CDDET check : Check CD detection sensor. Result is shown on the right side.
- 3. EEPROM Default set: Use this to set EEPROM set values to default values. Before executing this, it is recommended to record current values.
- 4. Hydet init : Initialize for direct searching.
- 5. Sled init : Cancel the sled stop position offset.
- 6. EEPROM data : Display EEPROM set values list.
Display is made with HEX numbers "00"~"FF".

If the check on this screen is NG EMG turns to the number that is not "00.."

EEPROM data screen display (at default setting)

EEPROM data					
		CD	DVD		
Set	No.	00	SL	L0	L1
Focus Offset		80	80	80	80
Focus Gain		30	18	30	30
TRK Offset		80	80	80	80
TRK Gain		30	30	30	30
Tilt Offset		80	80	80	80
Pullin Level		9e	9f	ab	ab
Sled Gain		10	18	18	18
EQ Init			3a	35	30
VCO Offset			76	76	76

Figure 18

This screen displays various set values including adjusted results stored in the EEPROM.

- Set No. : Nothing is displayed (00 is displayed)
- Focus Offset : 00~FF 80 center (DVD_SL)
- Focus Gain : 00~7F 20 center (DVD_SL)
- TRK. Offset : 00~FF 80 center (DVD_SL)
- TRK. Gain : 00~7F 30 center (DVD_SL)
- Tilt Offset : 00~FF 80 center (DVD_SL)
- Pullin Level : 80~B0 approx. (DVD_SL)
- EQ Init : Fixed value
- VCO Offset : 70~80 approx. (DVD_SL)

6-5. Emergency History

With the initial menu displayed, press [3] key on the standard commander, and the information on emergency history of Drvcon will be displayed. This information is given over two pages, which can be changed over with [1] and [2] keys. To return to the initial menu, press [0] key.

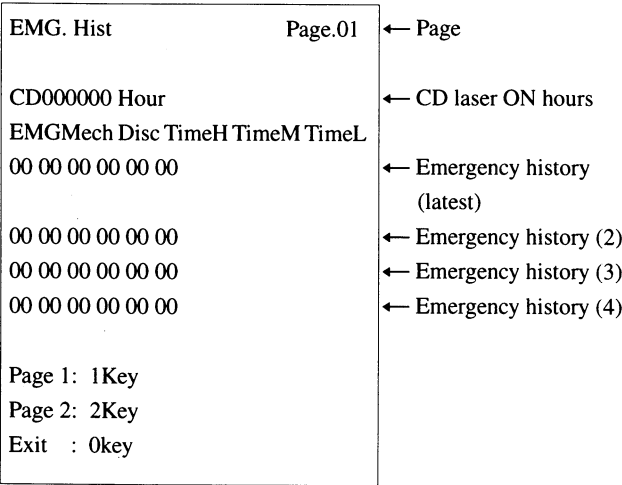


Figure 19

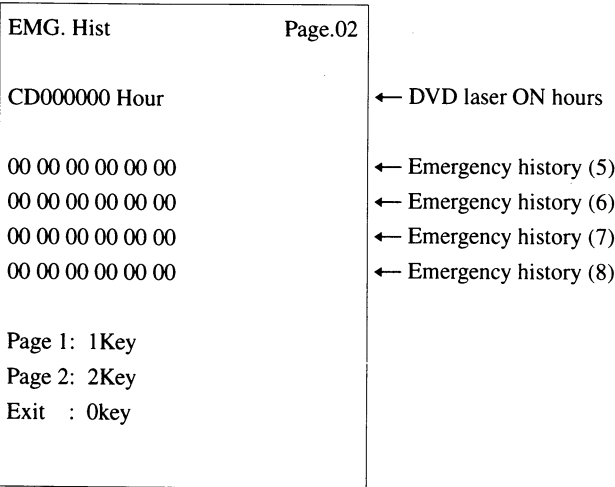


Figure 20

The following hidden commands are available. Data clear can be confirmed from the fact that the screen display changes.

- ⊙ Clearing laser ON hours
Press [DISPLAY] and [CLEAR] keys on the standard commander in this order.
- ⊙ Clearing emergency history
Press [TITLE] and [CLEAR] keys on the standard commander in this order.
After repair is finished, always clear emergency history data.
- ⊙ Clearing Syscon preset
Press [DVD MENU] and [CLEAR] keys on the standard commander in this order.

For EMG code, Mech mode, and Disc information of history display, see “Drvcon emergency code list”, “Drvcon Mech mode list”, and “Drvcon disc status list”.

6-6. Other Checks

With the initial menu displayed, press [4] key on the standard commander, and the information such as destination and ROM revision will be displayed. At this time, LED and display tube lighting check is also executed.

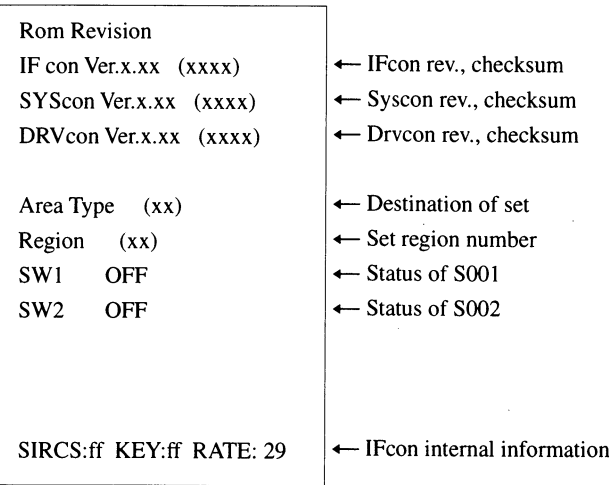
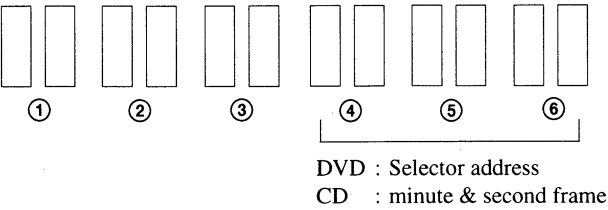


Figure 21

After mode is selected, checksum calculation and information reading are executed, thus requiring time before display. Also, during this display, LEDs and display tube are all turned on.

The status of keys on standard commander and operation panel is displayed in real time. However, if [POWER] key is pressed, the power is turned off after display. Also, this mode is terminated if pressing [RETURN] key.
The door is opened/closed by pressing [PANEL] key on operation panel.
When [RETURN] key is pressed, LED and display tube are turned off and the initial screen is resumed.
Note: A number of two decimal places of Rom Revision is a design management code and therefore ignore it.

How to see Emergency History



- ① EMG CODE
- ② MECH MODE
- ③ DISC
- ④ TIME (MSB)
- ⑤ TIME
- ⑥ TIME (LSB)

- ① EMG CODE (Drvcon emergency code list)

- Initial
- 00: No Emergency
 - 01: RAM check NG (IC138)
 - 02: ROM check NG (ICS140)
 - 03: EEPROM RW NG (IC139)
 - 04: EEPROM BUSY Time Out (IC139)
 - 05: CXD2545 (IC717) check NG
 - 06: CXD8599 (IC710) check NG
 - 07: CXD8663 (IC181) check NG
 - 08: HYDET NG
 - 09: SDCNTL NG
 - 0A: VCO NG
 - 0B: Focus Gain Adj NG
 - 0C: Trk Gain Adj NG
 - 0D: Jitter NG

- Door & Tray system
- 10: Door Time Out
 - 11: Tray Time Out

- Spindle system
- 20: Spindle Lock Time Out
 - 21: Spindle Out of Control

- Sled system
- 30: Home Position Time Out
 - 31: Sled FG NG
 - 32: Sled Drv NG

- Tilt system start up/down
- 50: Focus Search Time Out

- Trace system
- 60: CL VLOCK NG
 - 61: PLL NG
 - 62: Address Continuity NG
 - 63: PLL Lock Time Out
 - 64: CLV Lock Time Out
 - 65: Layer slip NG

- Seek system
- 70: Address Read NG
 - 71: Seek NG
 - 72: Focus Jump NG
 - 73: TOC Read Time Out
 - 74: FOK NG
 - 75: Req Address NG
 - 76: Req Time NG
 - 77: Req Track No NG

- Communication system
- 80: Communication NG

- ② MECH MODE (Drvcon Mech mode list)
- 00: Power ON Ready (immediately after power on)
- 10: Eject
- 20: Stop
- 30: Trace (data supply mode)
- 40: Pause
- 50: Scan
- 60: Mecha Initialize
- 70: Load
- 80: Unload
- 90: Spin Up (disc startup operation)
- A0: Spin Down (disc stop operation)
- B0: Seek (search mode)
- C0: Error Recovery
- D0: Service

- ③ DISC (Drvcon status list)
- bit Value:0 Value:1
- 0: DVD/CD DVD CD
- 1: 12cm/8cm 12cm 8cm
- 2: Layer Single Dual
- 3: Reflectivity High Low
- 4: Judge/No judge Judge No judge
- 5: Disc/No disc Disc No disc
- 6: CDROM Not True
- 7: Track Density (DVD) 0.74 mm 0.80 mm

Note: If judge/no judge is not “judge”, correct data have not been written.

SECTION 7
ELECTRICAL ADJUSTMENT

In making adjustment, refer to 7-6. Adjustment
Related Parts Arrangement.

7-1. Power Supply Check

1. PS-393 Board

Mode	E-E
Instrument	Digital voltmeter
AU+9V check	
Test point	CN952 ① pin
Specification	9 ±0.5V
AU-10V check	
Test point	CN952 ④ pin
Specification	-12.5V

Checking method:

- 1) Confirm that each voltage satisfies the specification.

2. MB-75 Board

Mode	E-E
Instrument	Digital voltmeter
-7V check	
Test point	CN001 ④ pin
Specification	-7 ±0.5V
+12V check	
Test point	CN001 ⑥ pin
Specification	+12 ±0.5V
+5.2V check	
Test point	CN001 ⑪, ⑫ pins
Specification	+5.2 ±0.2V

Checking method:

- 1) Confirm that each voltage satisfies the specification.

7-2. Adjustment of System Control

1. 27MHz Free Run (MB-75 board)

<Purpose>

27MHz is the reference clock for the MPEG system, and if it is not adjusted correctly, checking of 22 MHz and 33 MHz lock in the following steps will result in NG.

Mode	E-E
Test point	TP018 (27MHz FREE RUN)
Instrument	Oscilloscope, Frequency counter
Adjusting element	RV001
Specification	27000000 ±100Hz

Adjusting method:

- 1) Connect TP025 (XULK) to the GND.
- 2) Confirm that the waveform at TP018 is normal.
- 3) Adjust RV001 to attain 27000000 ± 100 Hz.
- 4) After adjustment, disconnect TP025 from GND.



Figure 7-1

2. 22MHz Adjustment (MB-75 board)

<Purpose>

22MHz is the reference clock to generate 33 MHz clock, and if it is not adjusted correctly, checking of 33 MHz will result in NG.

Mode	E-E
Test point	TP022 (512fs)
Instrument	Oscilloscope, Frequency counter
Adjusting element	CT001
Specification	22579200 ±100Hz

Adjusting method:

- 1) In the "0" Syscon Diagnosis of the test mode initial menu, select the CD mode.
- 2) Confirm that the waveform at TP022 is normal.
- 3) Adjust CT001 to attain 22579200 ±100Hz.



Figure 7-2

3. 33 MHz Check (MB-75 board)

<Purpose>

33 MHz is the reference clock for audio system to play CD (including video CD), and if it is not adjusted correctly, no sound will be generated or sounds will be distorted.

Mode	E-E
Test point	TP019 (33 MHz)
Instrument	Oscilloscope, Frequency counter
Specification	33868800 ±150Hz

Checking method:

- 1) In the "0" Syscon Diagnosis of the test mode initial menu, select the CD mode.
- 2) Confirm that the waveform at TP019 is normal.
- 3) Confirm that the frequency is 33868800 ±150Hz.



Figure 7-3

4. 33 MHz Lock Check (MB-75 board)

<Purpose>

This checks whether 33 MHz is synchronized with reference clock 27MHz for MPEG system. If it is not locked, the sounds and pictures are not synchronous during MPEG playing or playing is suspended.

Mode	E-E
Test point	TP021 (PH-COMP)
Instrument	Oscilloscope, Frequency counter
Specification	21.6 ±0.01kHz

Checking method:

- 1) In the "0" Syscon Diagnosis of the test mode initial menu, select the CD mode.
- 2) Confirm that a rectangular wave at TP021 is locked.
- 3) Confirm that the frequency is 21.6 ±0.01kHz.



Figure 7-4

5. 24 MHz Adjustment (MB-75 board)

<Purpose>

24 MHz is the reference clock to generate 36 MHz clock, and if it is not adjusted correctly, checking of 36 MHz will result in NG.

Mode	E-E
Test point	TP022 (512fs)
Instrument	Oscilloscope, Frequency counter
Adjusting element	CT002
Specification	24576000 ±100Hz

Adjusting method:

- 1) In the "0" Syscon Diagnosis of the test mode initial menu, select the DVD mode.
- 2) Confirm that the waveform at TP022 is normal.
- 3) Adjust CT002 to attain 24576000 ±100Hz.



Figure 7-5

6. 36 MHz Check (MB-75 board)

<Purpose>

36 MHz is the reference clock for audio system to play DVD, and if it is not adjusted correctly, no sound will be generated or sounds will be distorted.

Mode	E-E
Test point	TP020 (36 MHz)
Instrument	Oscilloscope, Frequency counter
Specification	36864000 ±150 Hz

Checking method:

- 1) In the "0" Syscon Diagnosis of the test mode initial menu, select the DVD mode.
- 2) Confirm that the waveform at TP020 is normal.
- 3) Confirm that the frequency is 36864000 ±150 Hz.



Figure 7-6

7. 36 MHz Lock Check (MB-75 board)

<Purpose>

This checks whether 36 MHz is synchronized with reference clock 27 MHz for MPEG system. If it is not locked, the sounds and pictures are not synchronous during MPEG playing or playing is suspended.

Mode	E-E
Test point	TP021 (PH-COMP)
Instrument	Oscilloscope, Frequency counter
Specification	24.0 ±0.01 kHz

Checking method:

- 1) In the "0" Syscon Diagnosis of the test mode initial menu, select the DVD mode.
- 2) Confirm that a rectangular wave at TP021 is locked.
- 3) Confirm that the frequency is 24.0 ±0.01 kHz.



Figure 7-7

8. 16 MHz Check (MB-75 board)

<Purpose>

16 MHz is the reference clock for audio system to play CD (including video CD), and if it is not adjusted correctly, no sound will be generated or sounds will be distorted.

Mode	E-E
Test point	IC770 20 pin
Instrument	Oscilloscope, Frequency counter
Specification	16934400 ±75 Hz.

Checking method:

- 1) Confirm that the waveform at IC770 ②0 pin is normal.
- 2) Confirm that the frequency is 16934400 ±75 Hz.



Figure 7-8

7-3. Adjustment of Video System

1. Video Level Adjustment (MB-75 board)

<Purpose>

This adjustment is made to satisfy the NTSC Standard, and if not adjusted correctly, the brightness will be too large or small.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑩ pin (terminating 75)
Instrument	Oscilloscope
Adjusting element	RV479
Specification	1 ±0.02 Vp-p

Adjusting method:

- 1) In the test mode initial menu "0" Syscon Diagnosis, set so that CXD1914 color bars are generated.
- 2) Adjust the RV479 to attain 1 ±0.02 Vp-p.



Figure 7-9

2. S-terminal Output Check (MB-75 board)

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an S-terminal cable.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑦ pin (terminating 75)
Instrument	Oscilloscope
Specification	1 ±0.05 Vp-p

Checking method:

- 1) In the test mode initial menu "0" Syscon Diagnosis, set so that CXD1914 color bars are generated.
- 2) Confirm that the S-Y level is 1 ± 0.05 Vp-p.

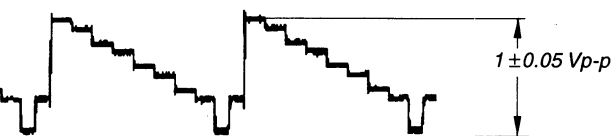


Figure 7-10

3. Checking Composite Video Output B-Y(MB-75 board)

<Purpose>

This checks composite video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ① pin (terminating 75)
Instrument	Oscilloscope
Specification	700 ±30 mVp-p

Checking method:

- 1) Confirm that the B-Y level is 700 ±30 mVp-p.

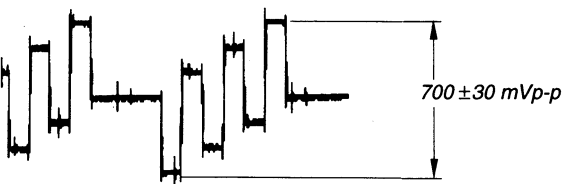


Figure 7-11

4. Checking Composite Video Output R-Y(MB-75 board)

<Purpose>

This checks composite video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ③ pin (terminating 75)
Instrument	Oscilloscope
Specification	700 ±30 mVp-p

Checking method:

- 1) Confirm that the R-Y level is 700 ± 30 mVp-p.



Figure 7-12

5. Checking Composite Video Output Y (MB-75 board)

<Purpose>

This checks composite video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	CXD1914 (ENC) check in test mode menu "0"
Signal	Color bars
Test point	CN005 ⑤ pin (terminating 75)
Instrument	Oscilloscope
Specification	1 ± 0.05 Vp-p

Checking method:

- 1) Confirm that the Y level is 1 ± 0.05 Vp-p.



Figure 7-13

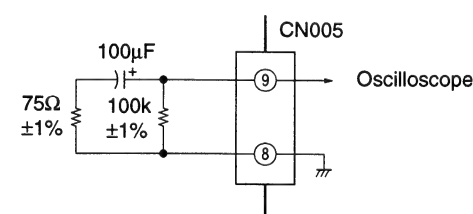
6. Checking S Video Output S-C (MB-75 board)

<Purpose>

This checks whether the S-C satisfies the NTSC Standard. If it is not correct, the colors will be too dark or light.

Mode	CXD1914 (ENC) check in test mode menu "0"
Signal	Color bars
Test point	CN005 ⑨ pin
Instrument	Oscilloscope
Specification	286 ± 20 mVp-p

Connection:



Checking method:

- 1) Confirm that the S-C burst is 286 ± 20 mVp-p.



Figure 7-14

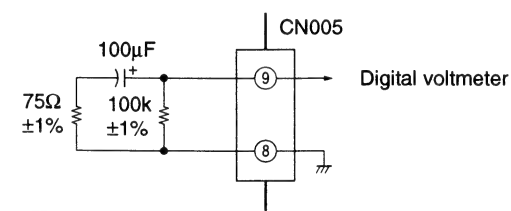
7. Checking S Video Output DC Level (MB-75 board)

<Purpose>

This checks signals for S1 and S2 compatible TV. If they are not correct, the TV will not switch automatically to letter box, etc.

Mode	CXD1914 (ENC) check in test mode menu "0"
Signal	Color bars
Test point	CN005 ⑨ pin
Instrument	Digital voltmeter
Specification	S-terminal 0V: 0V S-terminal 5V: $5.0^{+0}_{-1.5}$ V

Connection:

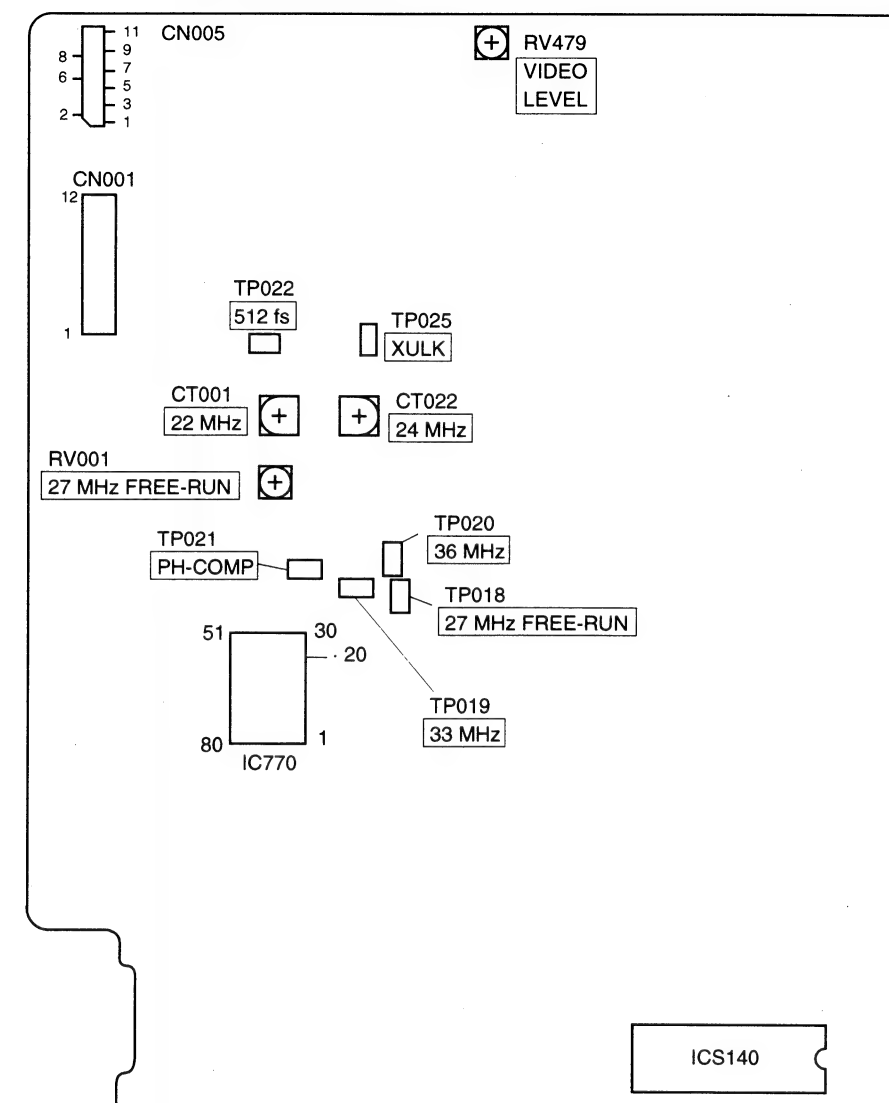


Checking method:

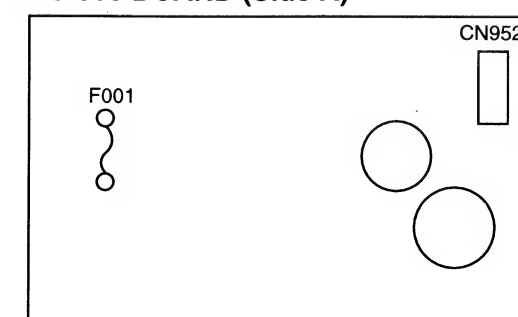
- 1) In the test mode initial menu "0" Syscon Diagnosis, select S-terminal 0V.
Confirm that the voltage at CN005 ⑨ pin is 0V.
- 2) Press any key to select S-terminal 5V.
Confirm that the voltage at CN005 ⑨ pin is $5.0^{+0}_{-1.5}$ V.

7-4. Adjustment Related Parts Arrangement

MB-75 BOARD (Side A)



PS-393 BOARD (Side A)



SECTION 8
REPAIR PARTS LIST

8-1. EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

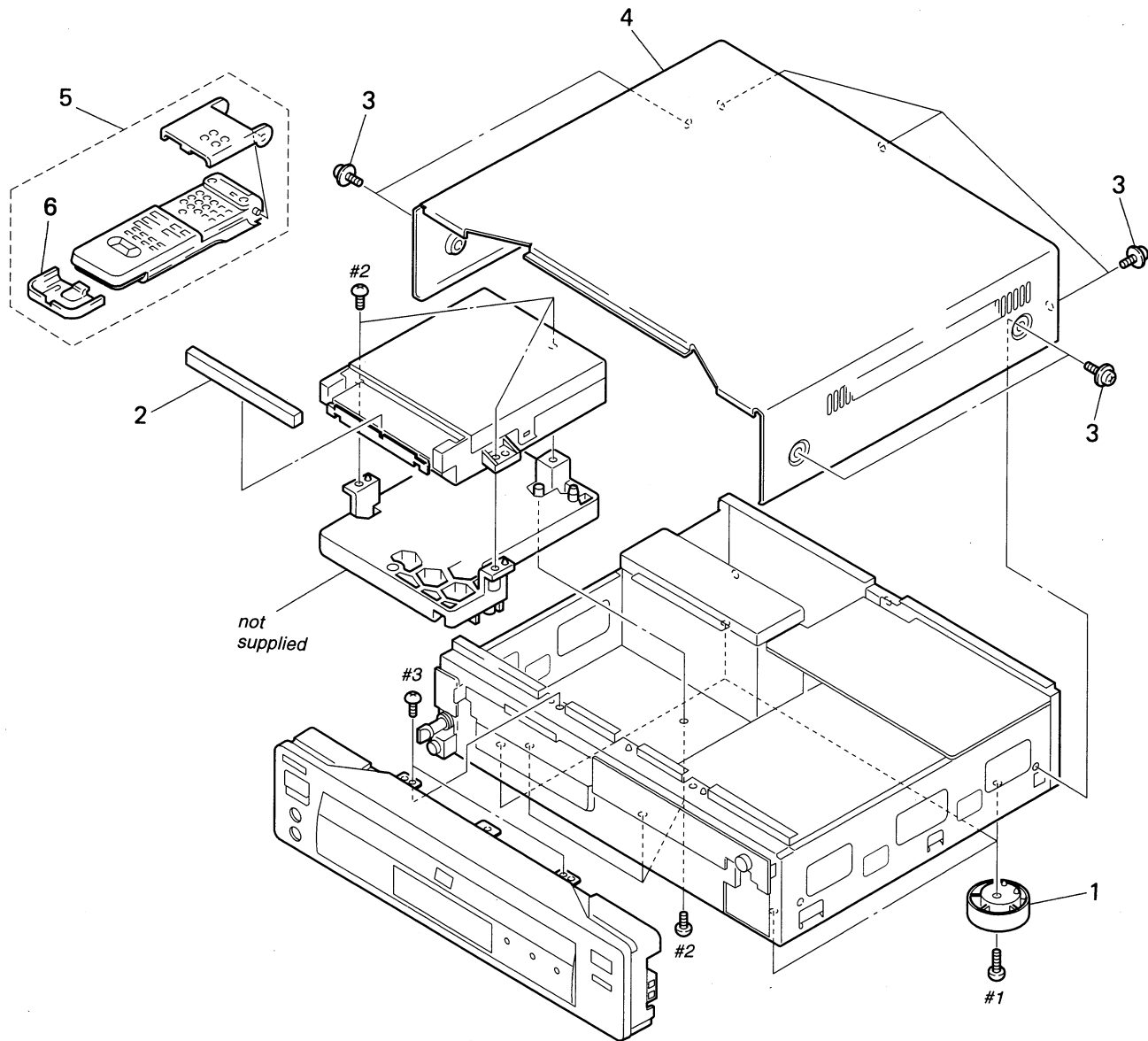
↑ ↑
Parts Color Cabinet's Color

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

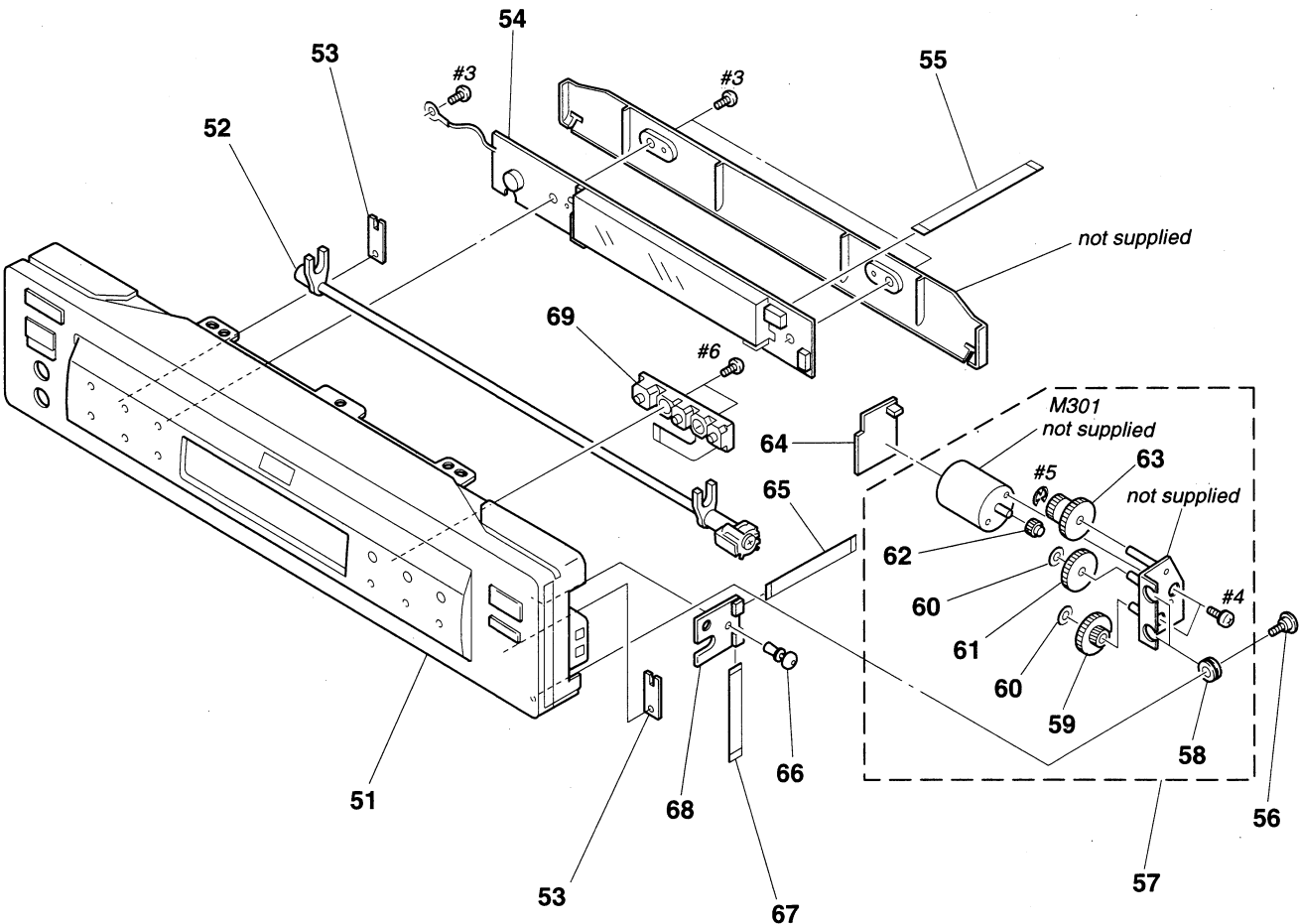
Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-1. CASE ASSEMBLY



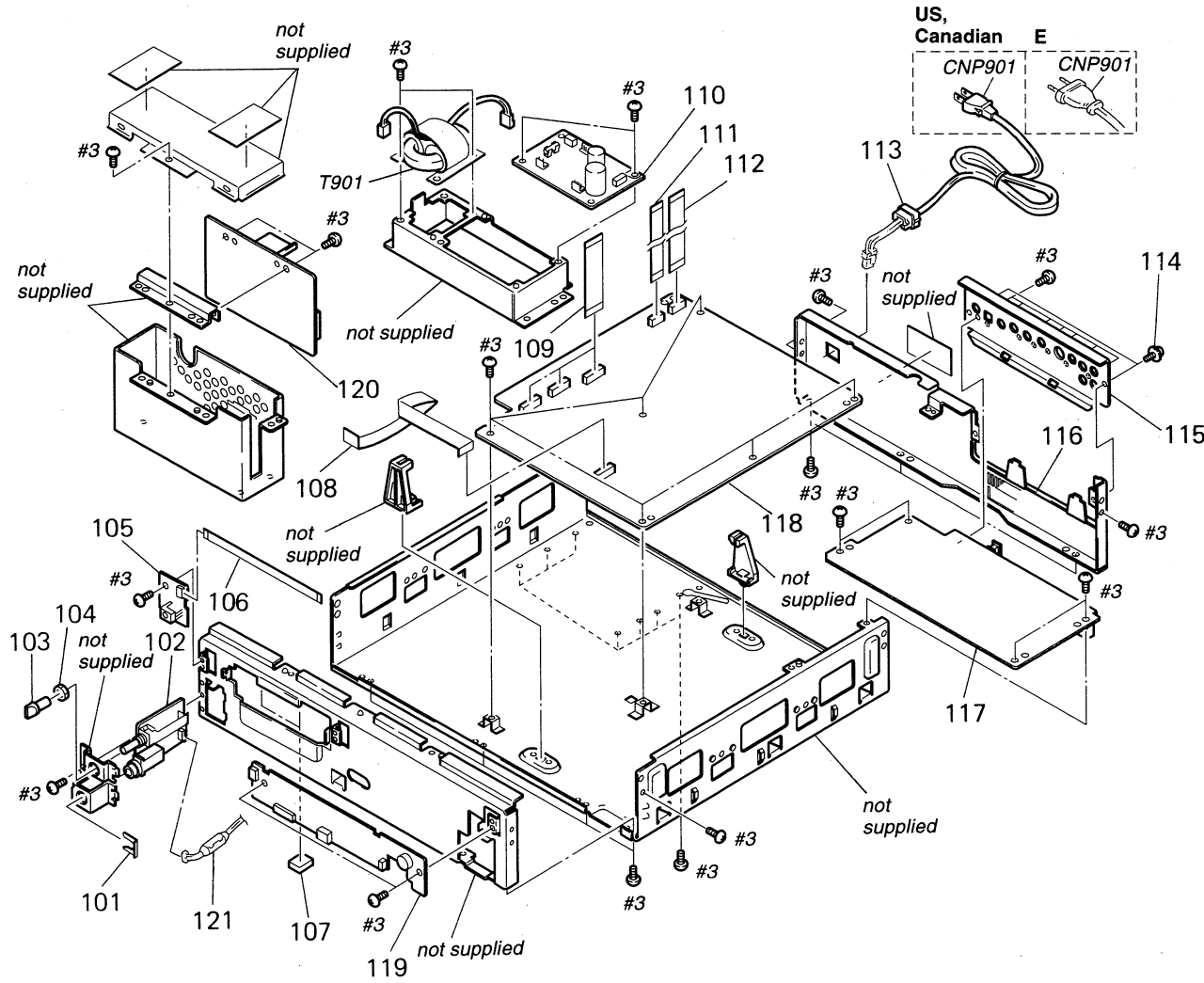
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3602-115-1	FOOT ASSY (E)		* 4	3-974-981-01	CASE, TOP (E)	
1	X-3947-227-1	FOOT ASSY (US, Canadian)		* 4	3-974-981-11	CASE, TOP (US, Canadian)	
2	3-974-960-01	COVER, TRAY (E)		5	1-475-086-21	COMMANDER, STANDARD (RMT-D100A)	
2	3-974-960-11	COVER, TRAY (US, Canadian)				(US, Canadian)	
3	3-710-901-41	SCREW, TAPPING		5	1-475-086-31	COMMANDER, STANDARD(RMT-D100E) (E)	
				6	9-939-686-01	LID, BATTERY CASE (for RMT-100A/D100E)	

8-1-2. FRONT PANEL ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	A-6062-004-A	SUB BLOCK ASSY, FRONT PANEL (E)		60	3-377-720-01	WASHER, POLYETHYLENE	
51	A-6062-018-A	SUB BLOCK ASSY (B),FRONT PANEL (US, Canadian)		61	3-975-015-01	GEAR (C)	
52	A-6062-009-A	SHAFT ASSY, LINK		62	4-968-863-01	GEAR (A)	
* 53	3-974-956-01	RETAINER, LINK SHAFT		63	3-975-016-01	GEAR (D)	
* 54	A-6065-005-A	FL-80 BOARD, COMPLETE (E)		* 64	A-6065-007-A	CN-99 BOARD, COMPLETE (E)	
* 54	A-6065-020-A	FL-80 BOARD, COMPLETE (US, Canadian)		* 64	A-6065-022-A	CN-99 BOARD, COMPLETE (US, Canadian)	
55	1-782-406-11	CABLE, FLEXIBLE FLAT (FFF-15) 8P		65	1-782-197-11	CABLE, FLEXIBLE FLAT (FFD-1)	
56	3-975-023-01	SCREW, CUSHION STOPPER		* 66	3-954-681-01	RIVET, NYLON	
57	A-6062-008-A	DRIVING BLOCK ASSY, DOOR		67	1-782-198-11	CABLE, FLEXIBLE FLAT (FDC-3)	
58	3-570-118-00	CUSHION, MOTOR		* 68	A-6065-006-A	DR-84 BOARD, COMPLETE (E)	
59	3-975-014-01	GEAR (B)		* 68	A-6065-021-A	DR-84 BOARD, COMPLETE (US, Canadian)	
				69	1-475-109-11	BLOCK, TOUCH SWITCH	

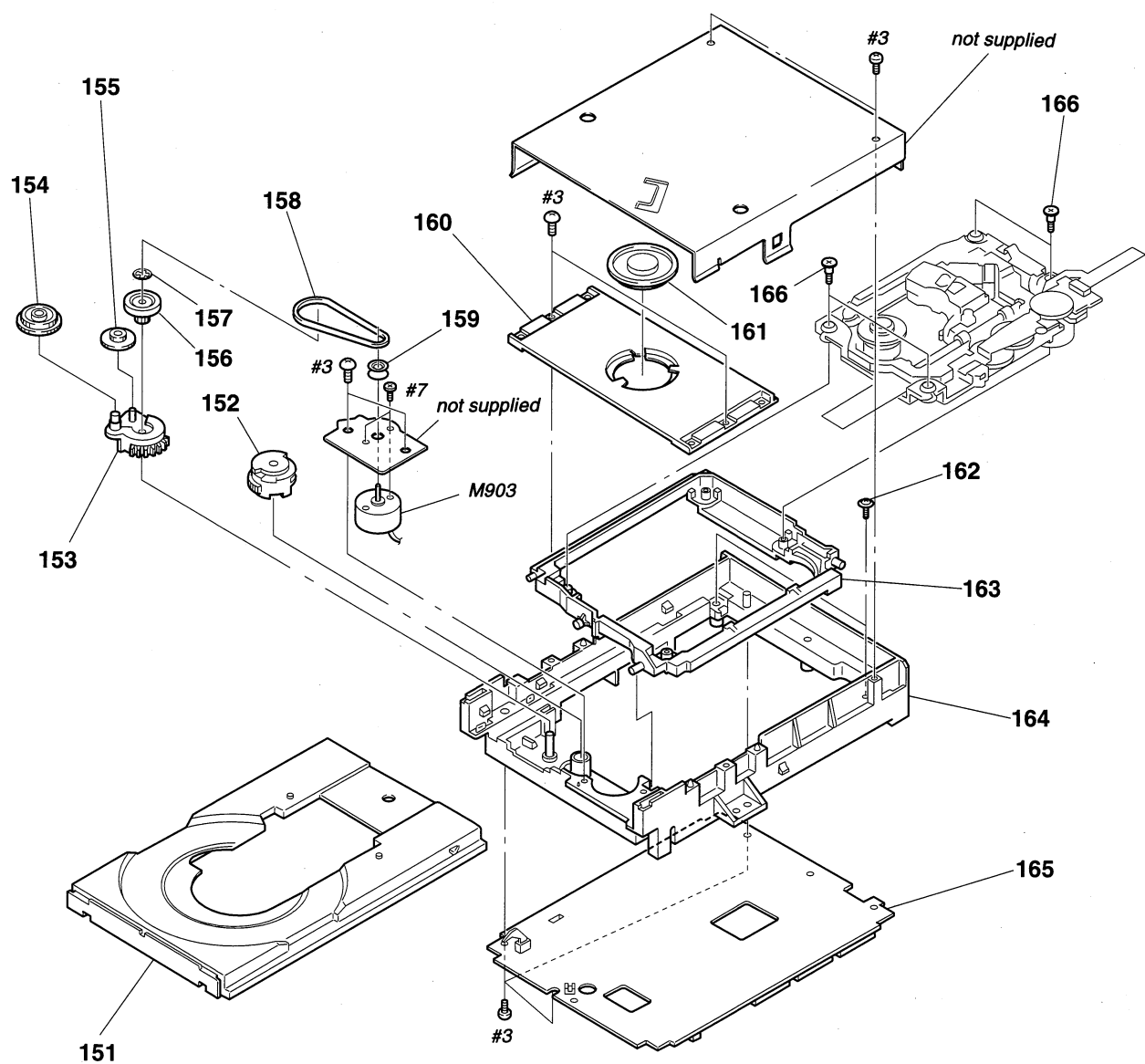
8-1-3. CHASSIS ASSEMBLY



The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
--	---

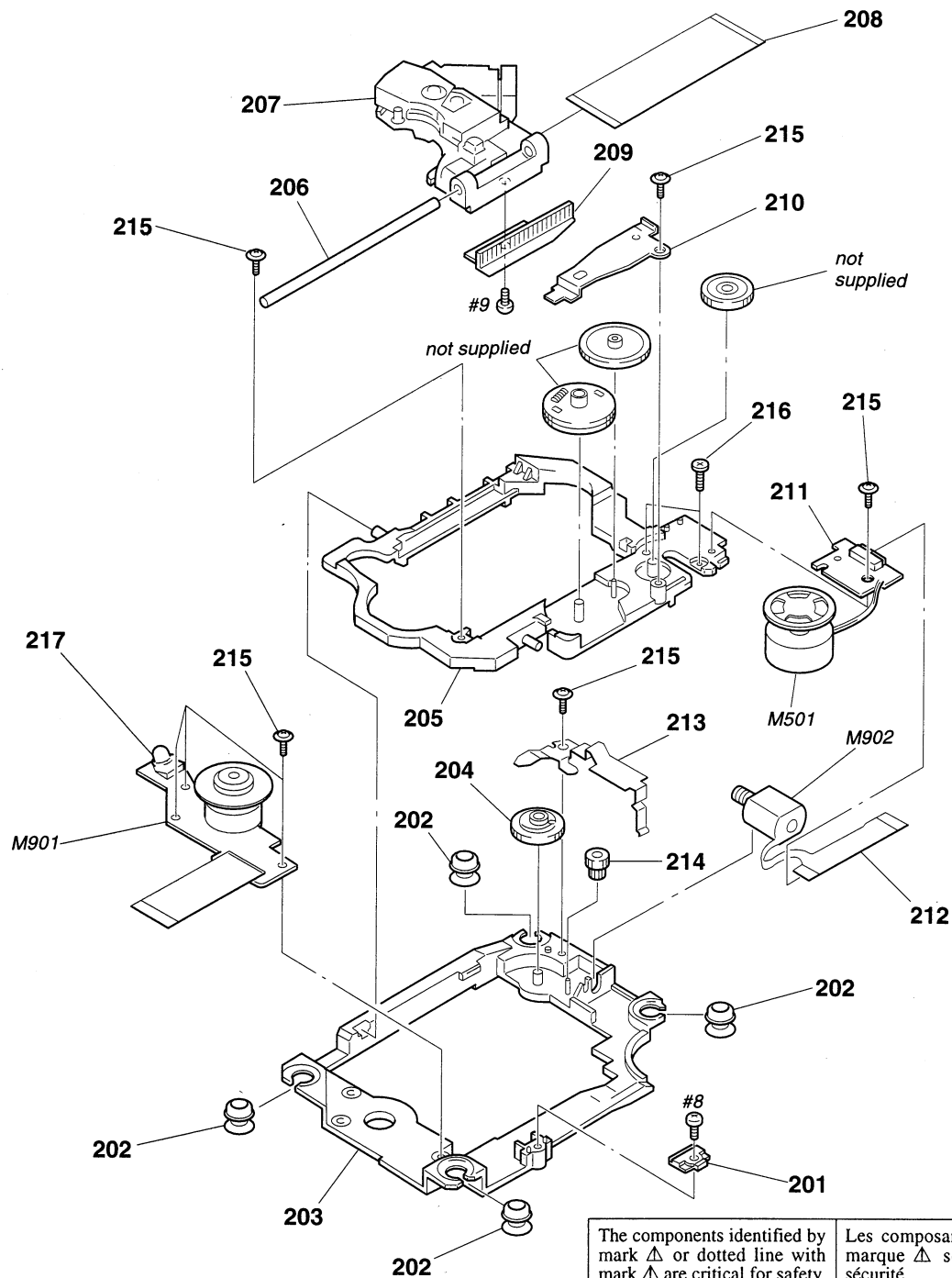
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101	3-684-436-01	PLATE, MOUNT		115	3-974-970-01	PLATE, JACK (E)	
* 102	A-6065-004-A	HP-92 BOARD, COMPLETE (E)		115	3-974-970-11	PLATE, JACK (US, Canadian)	
102	A-6065-029-A	HP-92 BOARD, COMPLETE (US, Canadian)		* 116	3-974-969-01	PANEL, REAR (E)	
103	3-974-959-01	KNOB, VOLUME (E)		* 116	3-974-969-11	PANEL, REAR (US, Canadian)	
103	3-974-959-11	KNOB, VOLUME (US, Canadian)		* 117	A-6065-009-A	AU-194 BOARD, COMPLETE (E)	
104	3-950-989-01	NUT (M7), HEXAGON		117	A-6065-024-A	AU-194 BOARD, COMPLETE (US, Canadian)	
* 105	A-6065-002-A	FL-73 BOARD, COMPLETE (E)		* 118	A-6065-032-A	MB-75 BOARD, COMPLETE (E)	
105	A-6065-027-A	FL-73 BOARD, COMPLETE (US, Canadian)		* 118	A-6065-011-A	MB-75 BOARD, COMPLETE (US, Canadian)	
106	1-782-195-11	CABLE, FLEXIBLE FLAT (FFF-13)		* 119	A-6065-001-A	FP-411 BOARD, COMPLETE (E)	
107	3-831-441-99	CUSHION (A)		119	A-6065-026-A	FP-411 BOARD, COMPLETE (US, Canadian)	
108	1-782-194-11	CABLE, FLEXIBLE FLAT (FFM-15)		Δ 120	1-468-199-11	POWER BLOCK (SWITCHING REGULATOR) (US, Canadian)	
109	1-782-191-11	CABLE, FLEXIBLE FLAT (FTM-3)		Δ 120	1-468-200-11	POWER BLOCK (SWITCHING REGULATOR) (E)	
* 110	A-6065-000-A	PS-393 BOARD, COMPLETE (E)		* 121	1-543-830-11	CLAMP, SLEEVE FERRITE	
* 110	A-6065-025-A	PS-393 BOARD, COMPLETE (US, Canadian)		Δ CNP901	1-558-568-21	CORD, POWER (E)	
111	1-782-193-11	CABLE, FLEXIBLE FLAT (FAM-5)		Δ CNP901	1-559-583-21	CORD, POWER (US, Canadian)	
112	1-782-192-11	CABLE, FLEXIBLE FLAT (FAM-4)		Δ T901	1-431-174-11	TRANSFORMER, POWER (US, Canadian)	
* 113	3-703-244-00	BUSHING (2104), CORD		Δ T901	1-431-175-11	TRANSFORMER, POWER (E)	
114	3-710-901-41	SCREW, TAPPING					

8-1-4. DVD MECHANISM CHASSIS ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-967-257-01	TRAY (B)		160	3-975-089-01	BRACKET, PRESS PULLEY	
152	3-975-073-01	GEAR, CAM		* 161	3-975-074-01	PULLEY, PRESS	
153	3-975-087-01	GEAR, DRIVE		162	3-975-077-01	SCREW, BU STOPPER	
154	3-975-086-01	GEAR, TRAY DRIVING		* 163	3-975-088-01	HOLDER, BASE UNIT	
155	3-975-072-01	GEAR, LOADING (MIDWAY)		* 164	X-3947-008-1	BASE ASSY, LO	
156	3-975-071-01	PULLEY, LOADING		* 165	A-6065-030-A	TT-701 BOARD, COMPLETE	
157	3-669-596-00	WASHER (2.3), STOPPER		166	4-981-923-01	SCREW (M), STEP	
158	3-975-070-01	BELT		M903	1-698-348-31	MOTOR, DC (LOADING)	
159	3-975-085-01	PULLEY, MOTOR					

8-1-5. DVD MECHANISM CHASSIS ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 201	3-975-066-01	STOPPER, SKEW SHAFT		* 211	A-6065-031-A	LM-51 BOARD, COMPLETE	
* 202	3-975-061-01	INSULATOR		212	1-665-327-11	LT-31 FLEXIBLE BOARD	
* 203	3-975-056-01	BASE, SPINDLE		* 213	3-975-059-01	RETAINER, SKEW GEAR	
204	3-975-058-01	CAM, SKEW		214	3-975-057-01	GEAR, SKEW	
* 205	3-975-063-01	BASE, SLIDE		215	4-974-711-01	SCREW (2X5)(P TYIGHT),(+)PTTWH	
* 206	3-975-065-01	SHAFT, MAIN		216	4-974-725-01	SCREW (M1.7X2.5), P	
Δ 207	8-820-005-01	OPTICAL PICK-UP KHS-180AJ1N		217	8-749-013-33	IC KU160 (CD SENSOR)	
208	1-665-390-11	OP-15 FLEXIBLE BOARD		M501	X-3947-137-1	MOTOR ASSY, SLED	
209	3-975-067-01	GEAR, RACK		M901	1-698-944-11	MOTOR, DC (SPINDLE)	
* 210	3-975-064-01	RETAINER, SLED GEAR		M902	X-3947-138-1	MOTOR ASSY, SKEW	

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA... : μ A... uPA... : μ PA...
uPB... : μ PB... uPC... : μ PC...
uPD... : μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
*	A-6065-024-A	AU-194 BOARD, COMPLETE (US/Canadian)					C512	1-126-170-11	ELECT	1000uF	20%	50V	
	A-6065-009-A	AU-194 BOARD, COMPLETE (E)					C513	1-126-170-11	ELECT	1000uF	20%	50V	
	*****					C514	1-126-923-11	ELECT	220uF	20%	10V		
	(Ref.No. 2,000 Series)					C709	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		
	2-259-121-01	SCREW, TR					C710	1-126-023-11	ELECT	100uF	20%	25V	
	4-902-345-01	HEAT SINK											
	< CAPACITOR >					C711	1-136-165-00	FILM	0.1uF	5%	50V		
						C715	1-163-249-11	CERAMIC CHIP	82PF	5%	50V		
						C716	1-104-645-11	CERAMIC	1uF	20%	50V		
	C201	1-124-910-11	ELECT	47uF	20%	50V	C802	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C202	1-136-802-11	FILM	0.015uF	5%	100V	C803	1-163-005-11	CERAMIC CHIP	470PF	10%	50V		
C203	1-136-802-11	FILM	0.015uF	5%	100V								
C204	1-124-910-11	ELECT	47uF	20%	50V	C804	1-163-251-11	CERAMIC CHIP	100PF	5%	50V		
C206	1-126-049-11	ELECT	22uF	20%	50V	C805	1-124-721-11	ELECT	10uF	20%	50V		
						C806	1-124-721-11	ELECT	10uF	20%	50V		
C207	1-130-487-00	MYLAR	0.022uF	5%	50V	C807	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		
C208	1-130-483-00	MYLAR	0.01uF	5%	50V	C808	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		
C209	1-130-483-00	MYLAR	0.01uF	5%	50V								
C210	1-136-808-11	FILM	100PF	5%	100V	C809	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		
C211	1-136-808-11	FILM	100PF	5%	100V	C810	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		
						C811	1-124-910-11	ELECT	47uF	20%	50V		
C212	1-130-472-00	MYLAR	0.0012uF	5%	50V	C812	1-124-721-11	ELECT	10uF	20%	50V		
C213	1-130-484-00	MYLAR	0.012uF	5%	50V	C813	1-136-850-11	FILM	0.1uF	5%	63V		
C214	1-115-197-11	ELECT	100uF	20%	25V								
C215	1-130-495-00	MYLAR	0.1uF	5%	50V	C814	1-136-850-11	FILM	0.1uF	5%	63V		
C216	1-115-197-11	ELECT	100uF	20%	25V	C815	1-124-721-11	ELECT	10uF	20%	50V		
						C816	1-124-910-11	ELECT	47uF	20%	50V		
C301	1-124-910-11	ELECT	47uF	20%	50V	C817	1-163-229-11	CERAMIC CHIP	12PF	5%	50V		
C303	1-136-802-11	FILM	0.015uF	5%	100V	C818	1-163-229-11	CERAMIC CHIP	12PF	5%	50V		
C307	1-130-487-00	MYLAR	0.022uF	5%	50V								
C308	1-130-483-00	MYLAR	0.01uF	5%	50V	C819	1-136-850-11	FILM	0.1uF	5%	63V		
C309	1-130-483-00	MYLAR	0.01uF	5%	50V	C820	1-136-850-11	FILM	0.1uF	5%	63V		
						C821	1-136-850-11	FILM	0.1uF	5%	63V		
C310	1-136-808-11	FILM	100PF	5%	100V	C822	1-124-721-11	ELECT	10uF	20%	50V		
C311	1-136-808-11	FILM	100PF	5%	100V	C823	1-124-721-11	ELECT	10uF	20%	50V		
C312	1-130-472-00	MYLAR	0.0012uF	5%	50V								
C313	1-130-484-00	MYLAR	0.012uF	5%	50V	C824	1-124-920-11	ELECT	330uF	20%	50V		
C314	1-115-197-11	ELECT	100uF	20%	25V	C825	1-126-052-11	ELECT	100uF	20%	50V		
						C826	1-126-052-11	ELECT	100uF	20%	50V		
C315	1-130-495-00	MYLAR	0.1uF	5%	50V	C827	1-163-239-11	CERAMIC CHIP	33PF	5%	50V		
C316	1-115-197-11	ELECT	100uF	20%	25V	C839	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C501	1-161-494-00	CERAMIC	0.022uF		25V								
C502	1-128-201-11	ELECT	100uF	20%	50V	C840	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C503	1-136-802-11	FILM	0.015uF	5%	100V								
	< CONNECTOR >												
C504	1-128-201-11	ELECT	100uF	20%	50V								
C505	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	CN401	1-564-506-11	PLUG, CONNECTOR 3P					
C506	1-128-201-11	ELECT	100uF	20%	50V	* CN501	1-564-509-11	PLUG, CONNECTOR 6P					
C508	1-136-850-11	FILM	0.1uF	5%	63V	CN701	1-774-767-11	CONNECTOR, FFC/FPC 15P					
C509	1-124-910-11	ELECT	47uF	20%	50V	CN801	1-774-766-11	CONNECTOR, FFC/FPC 11P					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* CN802	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P				< IC >	
		< DIODE >					
D501	8-719-404-49	DIODE MA111		IC201	8-759-602-83	IC M5238P	
D502	8-719-921-40	DIODE HTZJ-4.7C		IC202	8-759-712-02	IC NJM2114D	
D503	8-719-404-49	DIODE MA111		IC301	8-759-602-83	IC M5238P	
D505	8-719-115-38	DIODE RD5.1JS-T1B2		IC302	8-759-712-02	IC NJM2114D	
D506	8-719-404-49	DIODE MA111		IC401	8-759-711-85	IC NJM4580E-D	
D507	8-719-404-49	DIODE MA111		IC501	8-759-711-85	IC NJM4580E-D	
D508	8-719-404-49	DIODE MA111		IC502	8-759-711-85	IC NJM4580E-D	
D509	8-719-921-40	DIODE HTZJ-4.7C		IC701	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
D707	8-719-056-89	DIODE MA8120-TX		IC702	8-759-096-87	IC TC7WU04FU(T(E)R)	
D708	8-719-056-89	DIODE MA8120-TX		IC801	8-759-370-62	IC CXD8505BQ	
D709	8-719-056-89	DIODE MA8120-TX		IC802	8-759-361-58	IC CXA8055M-E1	
D710	8-719-056-89	DIODE MA8120-TX				< JACK >	
D711	8-719-056-89	DIODE MA8120-TX		J701	1-694-262-21	TERMINAL BOARD (LINE OUT/S VIDEO OUT)	
D712	8-719-056-89	DIODE MA8120-TX		J702	1-764-188-21	JACK(SMALL TYPE)(DIA. 3.5)(CONTROL S IN)	
D713	8-719-056-89	DIODE MA8120-TX		J703	1-779-317-21	JACK, PIN 1P (COMPONENT VIDEO OUT Y)	
D714	8-719-056-89	DIODE MA8120-TX		J704	1-779-318-21	JACK, PIN 1P (COMPONENT VIDEO OUT B-Y)	
D715	8-719-056-89	DIODE MA8120-TX		J705	1-779-316-21	JACK, PIN 1P (COMPONENT VIDEO OUT R-Y)	
D716	8-719-056-89	DIODE MA8120-TX		J706	1-779-382-21	JACK, PIN 1P (DIGITAL OUT COAXIAL)	
D717	8-719-056-89	DIODE MA8120-TX				< TRANSISTOR >	
D718	8-719-056-89	DIODE MA8120-TX					
D719	8-719-056-89	DIODE MA8120-TX		Q202	8-729-231-55	TRANSISTOR 2SC2878-AB	
D720	8-719-056-89	DIODE MA8120-TX		Q203	8-729-424-18	TRANSISTOR UN2113	
D721	8-719-056-89	DIODE MA8120-TX		Q302	8-729-231-55	TRANSISTOR 2SC2878-AB	
D722	8-719-056-89	DIODE MA8120-TX		Q303	8-729-424-18	TRANSISTOR UN2113	
D723	8-719-056-89	DIODE MA8120-TX		Q501	8-729-141-58	TRANSISTOR 2SC2275A-QP	
D724	8-719-056-89	DIODE MA8120-TX		Q502	8-729-141-10	TRANSISTOR 2SA985A	
D725	8-719-056-89	DIODE MA8120-TX		Q503	8-729-424-18	TRANSISTOR UN2113	
D727	8-719-056-89	DIODE MA8120-TX		Q504	8-729-141-58	TRANSISTOR 2SC2275A-QP	
D728	8-719-056-89	DIODE MA8120-TX		Q505	8-729-224-62	TRANSISTOR 2SK246-GR	
D801	8-719-404-49	DIODE MA111		Q506	8-729-421-19	TRANSISTOR UN2213	
		< EARTH TERMINAL >		Q507	8-729-421-19	TRANSISTOR UN2213	
* ET002	1-537-738-21	TERMINAL, EARTH		Q508	8-729-421-19	TRANSISTOR UN2213	
* ET003	1-537-738-21	TERMINAL, EARTH		Q509	8-729-230-49	TRANSISTOR 2SC2712-G	
		< FERRITE BEAD >				< RESISTOR >	
FB401	1-414-135-11	INDUCTOR CHIP 0UH		R201	1-249-504-11	CARBON 10 5% 1/4W	
FB402	1-414-135-11	INDUCTOR CHIP 0UH		R202	1-249-504-11	CARBON 10 5% 1/4W	
FB403	1-414-135-11	INDUCTOR CHIP 0UH		R203	1-249-504-11	CARBON 10 5% 1/4W	
FB701	1-414-553-11	INDUCTOR 0UH		R204	1-249-504-11	CARBON 10 5% 1/4W	
FB702	1-414-553-11	INDUCTOR 0UH		R205	1-249-538-11	CARBON 270 5% 1/4W	
FB703	1-414-553-11	INDUCTOR 0UH		R206	1-249-538-11	CARBON 270 5% 1/4W	
FB704	1-414-553-11	INDUCTOR 0UH		R207	1-249-461-11	CARBON 18K 5% 1/4W	
FB705	1-414-553-11	INDUCTOR 0UH		R208	1-249-461-11	CARBON 18K 5% 1/4W	
FB706	1-414-553-11	INDUCTOR 0UH		R209	1-249-461-11	CARBON 18K 5% 1/4W	
FB707	1-414-553-11	INDUCTOR 0UH		R210	1-249-461-11	CARBON 18K 5% 1/4W	
FB708	1-414-553-11	INDUCTOR 0UH		R211	1-249-551-11	CARBON 910 5% 1/4W	
FB709	1-414-553-11	INDUCTOR 0UH		R212	1-247-716-11	CARBON 1.8K 5% 1/4W	
FB710	1-414-553-11	INDUCTOR 0UH		R213	1-249-547-11	CARBON 620 5% 1/4W	
FB711	1-414-553-11	INDUCTOR 0UH		R214	1-247-891-00	CARBON 330K 5% 1/4W	
FB712	1-414-553-11	INDUCTOR 0UH		R215	1-249-633-11	CARBON 22 5% 1/2W	
		< FILTER >		R217	1-249-393-11	CARBON 10 5% 1/4W	
FL801	1-233-893-21	FILTER, CHIP EMI		R218	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R219	1-247-739-11	CARBON 100 5% 1/2W	
				R220	1-247-739-11	CARBON 100 5% 1/2W	
				R221	1-216-097-91	METAL GLAZE 100K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R301	1-249-504-11	CARBON	10	5%	1/4W
R302	1-249-504-11	CARBON	10	5%	1/4W
R303	1-249-504-11	CARBON	10	5%	1/4W
R304	1-249-504-11	CARBON	10	5%	1/4W
R305	1-249-538-11	CARBON	270	5%	1/4W
R306	1-249-538-11	CARBON	270	5%	1/4W
R307	1-249-461-11	CARBON	18K	5%	1/4W
R308	1-249-461-11	CARBON	18K	5%	1/4W
R309	1-249-461-11	CARBON	18K	5%	1/4W
R310	1-249-461-11	CARBON	18K	5%	1/4W
R311	1-249-551-11	CARBON	910	5%	1/4W
R312	1-247-716-11	CARBON	1.8K	5%	1/4W
R313	1-249-547-11	CARBON	620	5%	1/4W
R314	1-247-891-00	CARBON	330K	5%	1/4W
R315	1-249-633-11	CARBON	22	5%	1/2W
R317	1-249-393-11	CARBON	10	5%	1/4W
R318	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R319	1-247-739-11	CARBON	100	5%	1/2W
R320	1-247-739-11	CARBON	100	5%	1/2W
R321	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R402	1-259-464-11	CARBON	33K	5%	1/6W
R403	1-259-464-11	CARBON	33K	5%	1/6W
R404	1-259-464-11	CARBON	33K	5%	1/6W
R405	1-259-464-11	CARBON	33K	5%	1/6W
R406	1-259-452-11	CARBON	10K	5%	1/6W
R407	1-259-452-11	CARBON	10K	5%	1/6W
R408	1-259-464-11	CARBON	33K	5%	1/6W
R409	1-259-464-11	CARBON	33K	5%	1/6W
R410	1-249-520-11	CARBON	47	5%	1/4W
R411	1-249-520-11	CARBON	47	5%	1/4W
R501	1-249-425-11	CARBON	4.7K	5%	1/4W
R502	1-247-807-31	CARBON	100	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-425-11	CARBON	4.7K	5%	1/4W
R505	1-247-842-11	CARBON	3K	5%	1/4W
R506	1-247-807-31	CARBON	100	5%	1/4W
R507	1-249-421-11	CARBON	2.2K	5%	1/4W
R508	1-249-425-11	CARBON	4.7K	5%	1/4W
R509	1-247-807-31	CARBON	100	5%	1/4W
R510	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R511	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R512	1-249-436-11	CARBON	39K	5%	1/4W
R513	1-247-807-31	CARBON	100	5%	1/4W
R514	1-216-009-00	METAL CHIP	22	5%	1/10W
R515	1-216-081-00	METAL CHIP	22K	5%	1/10W
R517	1-216-081-00	METAL CHIP	22K	5%	1/10W
R706	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R707	1-216-295-91	CONDUCTOR, CHIP	(2012)	
R709	1-216-295-91	CONDUCTOR, CHIP	(2012)	
R711	1-216-033-00	METAL CHIP	220	5%	1/10W
R713	1-216-022-00	METAL CHIP	75	5%	1/10W
R803	1-216-033-00	METAL CHIP	220	5%	1/10W
R804	1-216-033-00	METAL CHIP	220	5%	1/10W
R805	1-216-033-00	METAL CHIP	220	5%	1/10W
R806	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R807	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R808	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R809	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R810	1-216-049-91	METAL GLAZE	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R811	1-216-113-00	METAL CHIP	470K	5%	1/10W
R812	1-216-025-91	METAL GLAZE	100	5%	1/10W
R814	1-216-295-91	CONDUCTOR, CHIP (2012)			
R816	1-216-295-91	CONDUCTOR, CHIP (2012)			
R817	1-249-425-11	CARBON	4.7K	5%	1/4W
R818	1-249-425-11	CARBON	4.7K	5%	1/4W
R819	1-259-415-11	CARBON	300	5%	1/6W
R820	1-259-415-11	CARBON	300	5%	1/6W
R821	1-259-412-11	CARBON	220	5%	1/6W
R822	1-259-412-11	CARBON	220	5%	1/6W
R823	1-259-412-11	CARBON	220	5%	1/6W
R824	1-259-412-11	CARBON	220	5%	1/6W
R825	1-259-415-11	CARBON	300	5%	1/6W
R826	1-259-415-11	CARBON	300	5%	1/6W
R827	1-249-551-11	CARBON	910	5%	1/4W
R828	1-247-708-11	CARBON	470	5%	1/4W
R829	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R830	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R832	1-216-295-91	CONDUCTOR, CHIP (2012)			
< RELAY >					
RY501	1-755-061-11	RELAY			
< TRANSFORMER >					
T701	1-459-795-11	COIL (WITH CORE)			
*	A-6065-022-A	CN-99 BOARD, COMPLETE (US/Canadian)			
*	A-6065-007-A	CN-99 BOARD, COMPLETE (E)			

(Ref.No. 1,000 Series)					
< CAPACITOR >					
C304	1-163-031-11	CERAMIC CHIP	0.01uF		50V
< CONNECTOR >					
CN302	1-770-634-11	CONNECTOR, FFC/FPC	3P		
*	A-6065-021-A	DR-84 BOARD, COMPLETE (US/Canadian)			
*	A-6065-006-A	DR-84 BOARD, COMPLETE (E)			

(Ref.No. 1,000 Series)					
< CAPACITOR >					
C131	1-165-319-11	CERAMIC CHIP	0.1uF		50V
< CONNECTOR >					
CN131	1-779-526-11	CONNECTOR, FFC/FPC	6P		
CN132	1-779-347-11	CONNECTOR, FFC/FPC	3P		
< PHOTO INTERRUPTER >					
PH131	8-749-011-97	PHOTO INTERRUPTER	GP1S93		
PH132	8-749-011-97	PHOTO INTERRUPTER	GP1S93		
< RESISTOR >					
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R132	1-216-089-91	METAL GLAZE	47K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R133	1-216-089-91	METAL GLAZE 47K 5%	1/10W		
*	A-6065-027-A	FL-73 BOARD, COMPLETE (US/Canadian)			
*	A-6065-002-A	FL-73 BOARD, COMPLETE (E)			

(Ref.No. 1,000 Series)					
< CAPACITOR >					
C151	1-126-205-11	ELECT CHIP 47uF 20%	6.3V		
< CONNECTOR >					
CN151	1-779-000-11	CONNECTOR, FFC/FPC 5P			
< DIODE >					
D151	8-719-404-49	DIODE MA111			
D152	8-719-404-49	DIODE MA111			
D153	8-719-027-84	DIODE CL-155UR/G-DT(ON/STANDBY)			
< IC >					
IC151	8-749-011-22	IC GP1U27X			
< COIL >					
L151	1-412-031-11	INDUCTOR CHIP 47uH			
< TRANSISTOR >					
Q151	8-729-424-08	TRANSISTOR UN2111			
< RESISTOR >					
R151	1-216-033-00	METAL CHIP 220 5%	1/10W		
R152	1-216-045-00	METAL CHIP 680 5%	1/10W		
< SWITCH >					
S151	1-571-760-11	SWITCH, KEY BOARD (POWER)			
*	A-6065-020-A	FL-80 BOARD, COMPLETE (US/Canadian)			
*	A-6065-005-A	FL-80 BOARD, COMPLETE (E)			

(Ref.No. 1,000 Series)					
3-831-441-XX SPACER					
3-884-241-01 SHEET (C), ADHESIVE					
< CAPACITOR >					
C001	1-163-031-11	CERAMIC CHIP 0.01uF	50V		
C002	1-126-603-11	ELECT CHIP 4.7uF 20%	35V		
C003	1-163-251-11	CERAMIC CHIP 100PF 5%	50V		
C004	1-126-204-11	ELECT CHIP 47uF 20%	16V		
C005	1-165-319-11	CERAMIC CHIP 0.1uF	50V		
C006	1-126-204-11	ELECT CHIP 47uF 20%	16V		
C007	1-126-204-11	ELECT CHIP 47uF 20%	16V		
C008	1-126-400-11	ELECT 22uF 20%	35V		
C009	1-126-603-11	ELECT CHIP 4.7uF 20%	35V		
C010	1-126-205-11	ELECT CHIP 47uF 20%	6.3V		
C011	1-163-031-11	CERAMIC CHIP 0.01uF	50V		
C012	1-165-319-11	CERAMIC CHIP 0.1uF	50V		

Ref. No.	Part No.	Description	Remark		
< CONNECTOR >					
CN001	1-770-889-11	SOCKET, CONNECTOR 8P			
CN002	1-779-345-11	CONNECTOR, FFC/FPC 7P			
< DIODE >					
D001	8-719-210-39	DIODE	EC10QS-04		
D003	8-719-210-39	DIODE	EC10QS-04		
D004	8-719-420-90	DIODE	MA8051-M		
D005	8-719-977-69	DIODE	DTZ24B		
D006	8-719-404-49	DIODE	MA111		
D007	8-719-404-49	DIODE	MA111		
< FILTER >					
FL001	1-233-893-21	FILTER, CHIP EMI			
< IC >					
IC001	8-759-438-82	IC	uPD16311GC-AB6		
< COIL >					
L001	1-414-185-41	INDUCTOR	22uH		
< FLUORESCENT INDICATOR >					
ND001	1-517-639-11	TUBE, FLUORESCENT INDICATOR			
< TRANSISTOR >					
Q001	8-729-105-29	TRANSISTOR	2SA1385		
Q002	8-729-010-05	TRANSISTOR	MSB709-RT1		
< RESISTOR >					
R001	1-216-009-00	METAL CHIP	22	5%	1/10W
R002	1-216-073-00	METAL CHIP	10K	5%	1/10W
R003	1-216-073-00	METAL CHIP	10K	5%	1/10W
R004	1-216-081-00	METAL CHIP	22K	5%	1/10W
R005	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R006	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R007	1-216-073-00	METAL CHIP	10K	5%	1/10W
R013	1-216-091-00	METAL CHIP	56K	5%	1/10W
R014	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R015	1-216-043-91	METAL GLAZE	560	5%	1/10W
R016	1-216-033-00	METAL CHIP	220	5%	1/10W
R019	1-216-025-91	METAL GLAZE	100	5%	1/10W
R020	1-216-025-91	METAL GLAZE	100	5%	1/10W
R021	1-216-025-91	METAL GLAZE	100	5%	1/10W
R023	1-216-073-00	METAL CHIP	10K	5%	1/10W
R024	1-216-073-00	METAL CHIP	10K	5%	1/10W
R025	1-216-073-00	METAL CHIP	10K	5%	1/10W
R026	1-216-073-00	METAL CHIP	10K	5%	1/10W
< TRANSFORMER >					
T001	1-448-740-31	TRANSFORMER, DC-DC CONVERTER			

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-6065-026-A	FP-411 BOARD, COMPLETE (US/Canadian)		S107	1-571-760-11	SWITCH, KEY BOARD (UP)	
	A-6065-001-A	FP-411 BOARD, COMPLETE (E)		S108	1-571-760-11	SWITCH, KEY BOARD (LEFT)	
		*****		S109	1-571-760-11	SWITCH, KEY BOARD (OPEN/CLOSE)	
		(Ref.No. 1,000 Series)		S110	1-571-760-11	SWITCH, KEY BOARD (PANEL UP/DOWN)	
		< BUZZER >		S111	1-571-760-11	SWITCH, KEY BOARD (PREV)	
BZ101	1-529-080-11	BUZZER, PIEZOELECTRIC		S112	1-571-760-11	SWITCH, KEY BOARD (NEXT)	
		< CAPACITOR >		S113	1-571-760-11	SWITCH, KEY BOARD (DNR)	
C101	1-165-319-11	CERAMIC CHIP 0.1uF	50V				
C102	1-165-319-11	CERAMIC CHIP 0.1uF	50V		A-6065-029-A	HP-92 BOARD, COMPLETE (US/Canadian)	
C103	1-165-319-11	CERAMIC CHIP 0.1uF	50V	*	A-6065-004-A	HP-92 BOARD, COMPLETE (E)	
C104	1-165-319-11	CERAMIC CHIP 0.1uF	50V			*****	
C105	1-165-319-11	CERAMIC CHIP 0.1uF	50V			(Ref.No. 1,000 Series)	
		< CAPACITOR >				< CAPACITOR >	
C106	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C608	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C107	1-163-031-11	CERAMIC CHIP 0.01uF	50V			< CONNECTOR >	
C108	1-163-031-11	CERAMIC CHIP 0.01uF	50V				
		< CONNECTOR >		CN601	1-564-506-11	PLUG, CONNECTOR 3P	
CN101	1-770-703-11	CONNECTOR, FFC/FPC 20P				< DIODE >	
CN102	1-779-526-11	CONNECTOR, FFC/FPC 6P		D601	8-719-056-89	DIODE MA8120-TX	
* CN103	1-691-067-41	HOUSING, CONNECTOR 8P		D602	8-719-056-89	DIODE MA8120-TX	
CN104	1-779-000-11	CONNECTOR, FFC/FPC 5P		D603	8-719-056-89	DIODE MA8120-TX	
		< DIODE >		D604	8-719-056-89	DIODE MA8120-TX	
D101	8-719-404-49	DIODE MA111		D605	8-719-404-49	DIODE MA111	
D102	8-719-404-49	DIODE MA111		D606	8-719-404-49	DIODE MA111	
		< IC >				< FERRITE BEAD >	
IC101	8-759-823-87	IC LB1638M		FB601	1-414-135-11	INDUCTOR CHIP 0UH	
		< TRANSISTOR >		FB602	1-414-135-11	INDUCTOR CHIP 0UH	
Q101	8-729-424-08	TRANSISTOR UN2111		FB603	1-414-135-11	INDUCTOR CHIP 0UH	
		< RESISTOR >				< FILTER >	
R101	1-216-049-91	METAL GLAZE 1K	5%	FL603	1-233-893-21	FILTER, CHIP EMI	
R102	1-216-049-91	METAL GLAZE 1K	5%			< JACK >	
R103	1-216-001-00	METAL CHIP 10	5%	J601	1-568-151-21	JACK, LARGE TYPE (PHONES)	
R104	1-216-001-00	METAL CHIP 10	5%			< VARIABLE RESISTOR >	
R105	1-216-059-00	METAL CHIP 2.7K	5%				
R106	1-216-063-91	METAL GLAZE 3.9K	5%	RV601	1-223-191-11	RES, VAR, CARBON 500/500 (PHONE LEVEL)	
R107	1-216-071-00	METAL CHIP 8.2K	5%				
R108	1-216-059-00	METAL CHIP 2.7K	5%				
R109	1-216-063-91	METAL GLAZE 3.9K	5%				
R110	1-216-071-00	METAL CHIP 8.2K	5%				
		< SWITCH >					
S101	1-571-760-11	SWITCH, KEY BOARD (RETURN)			A-6065-031-A	LM-51 BOARD, COMPLETE	
S102	1-571-760-11	SWITCH, KEY BOARD (ENTER)				*****	
S103	1-571-760-11	SWITCH, KEY BOARD (TITLE)				(Ref.No. 1,000 Series)	
S104	1-571-760-11	SWITCH, KEY BOARD (DVD MENU)				< CONNECTOR >	
S105	1-571-760-11	SWITCH, KEY BOARD (RIGHT)		CN501	1-691-799-11	SOCKET, CONNECTOR 8P	
		< IC >					
S106	1-571-760-11	SWITCH, KEY BOARD (DOWN)		IC501	8-719-052-42	IC ELEMENT, HOLE HW-108A-FT(D)	
				IC502	8-719-052-42	IC ELEMENT, HOLE HW-108A-FT(D)	

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
*	A-6065-011-A	MB-75 BOARD, COMPLETE (US/Canadian)					C056	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
*	A-6065-032-A	MB-75 BOARD, COMPLETE (E)					C057	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	

(Ref.No. 3,000 Series)													
< CAPACITOR >													
C001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C058	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C063	1-126-204-11	ELECT CHIP	47uF	20%	16V		
C003	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	C064	1-126-204-11	ELECT CHIP	47uF	20%	16V		
C004	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	C065	1-164-346-11	CERAMIC CHIP	1uF		16V		
C005	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C070	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V		
C006	1-126-204-11	ELECT CHIP	47uF	20%	16V	C071	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V		
C007	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C072	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V		
C008	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C073	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V		
C009	1-126-204-11	ELECT CHIP	47uF	20%	16V	C074	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		
C010	1-126-204-11	ELECT CHIP	47uF	20%	16V	C075	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		
C011	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C076	1-162-918-11	CERAMIC CHIP	18PF	5%	50V		
C012	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C077	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		
C013	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C078	1-162-917-11	CERAMIC CHIP	15PF	5%	50V		
C014	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C079	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		
C015	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V	C080	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C016	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C081	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		
C017	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C082	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C018	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C083	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C019	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V	C084	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C020	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C085	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C021	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C086	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C022	1-126-204-11	ELECT CHIP	47uF	20%	16V	C087	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C023	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C088	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C025	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C089	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C026	1-164-346-11	CERAMIC CHIP	1uF		16V	C091	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		
C027	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V	C092	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		
C028	1-126-204-11	ELECT CHIP	47uF	20%	16V	C093	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		
C029	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V	C094	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		
C031	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C095	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		
C032	1-164-346-11	CERAMIC CHIP	1uF		16V	C096	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C033	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C097	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C034	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C098	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C035	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C099	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C036	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C100	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C037	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C038	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C039	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C040	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C041	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C042	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C043	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C044	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C045	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C109	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C046	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C047	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C115	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		
C048	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C049	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C117	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C050	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C051	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C119	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
C052	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C120	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C053	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C054	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	C122	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C055	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C123	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
						C124	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
						C125	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C126	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C189	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C127	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C190	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C129	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C191	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C130	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C192	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C193	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C131	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C194	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C132	1-104-852-11	TANTAL. CHIP	22uF	20%	10V								
C133	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C195	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C134	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C196	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C135	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C197	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
							C198	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C136	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C199	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C137	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C138	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C205	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C139	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C206	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C140	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C207	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
							C208	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C141	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C209	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C142	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C143	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C210	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C144	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C211	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C145	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C212	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C213	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C146	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C214	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C147	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C148	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C215	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C150	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C216	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C151	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C217	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C218	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C152	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C219	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C154	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C156	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C220	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C158	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C221	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C159	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C222	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C223	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C160	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C224	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C161	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C162	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C225	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C163	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C226	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C164	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C230	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C231	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C165	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C232	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C166	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C167	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C233	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C168	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C234	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C169	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C235	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C236	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C170	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		C237	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C171	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C172	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C238	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C173	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C239	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C174	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C240	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C241	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C175	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C242	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C176	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C177	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C243	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C178	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C244	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C179	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C245	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C246	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C180	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C247	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C181	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C182	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C248	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C183	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C249	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	
C184	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C250	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
							C251	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C185	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C252	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C186	1-104-852-11	TANTAL. CHIP	22uF	20%	10V								
C187	1-104-852-11	TANTAL. CHIP	22uF	20%	10V		C253	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C188	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C255	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C256	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C332	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C257	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C333	1-126-206-11	ELECT CHIP 100uF	20%	6.3V	
C265	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C334	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
						C360	1-104-852-11	TANTAL. CHIP 22uF	20%	10V	
C266	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C361	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C267	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V							
C268	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C362	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C269	1-104-852-11	TANTAL. CHIP 22uF	20%	10V		C363	1-126-206-11	ELECT CHIP 100uF	20%	6.3V	
C270	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C364	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	
						C365	1-162-917-11	CERAMIC CHIP 15PF	5%	50V	
C271	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C366	1-162-917-11	CERAMIC CHIP 15PF	5%	50V	
C272	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V							
C273	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C367	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	
C274	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C368	1-162-917-11	CERAMIC CHIP 15PF	5%	50V	
C275	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C369	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	
						C370	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C276	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C371	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C277	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V							
C278	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C372	1-162-917-11	CERAMIC CHIP 15PF	5%	50V	
C279	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C373	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C280	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C374	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	
						C375	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C281	1-104-535-11	FILM CHIP 470PF	5%	50V		C376	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	
C282	1-104-537-11	FILM CHIP 680PF	5%	50V							
C284	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C377	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C285	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C378	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C286	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C379	1-162-917-11	CERAMIC CHIP 15PF	5%	50V	
						C380	1-107-823-11	CERAMIC CHIP 0.47uF	10%	16V	
C287	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C381	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C288	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V							
C289	1-104-852-11	TANTAL. CHIP 22uF	20%	10V		C382	1-104-851-11	TANTAL. CHIP 10uF	20%	10V	
C290	1-104-852-11	TANTAL. CHIP 22uF	20%	10V		C383	1-107-823-11	CERAMIC CHIP 0.47uF	10%	16V	
C291	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C384	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
						C385	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C304	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C386	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C305	1-104-851-11	TANTAL. CHIP 10uF	20%	10V							
C306	1-128-007-11	ELECT CHIP 2.2uF	20%	35V(E)		C387	1-126-206-11	ELECT CHIP 100uF	20%	6.3V	
C307	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C388	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C308	1-104-851-11	TANTAL. CHIP 10uF	20%	10V		C389	1-162-917-11	CERAMIC CHIP 15PF	5%	50V	
						C390	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C309	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C391	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C310	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V							
C312	1-104-852-11	TANTAL. CHIP 22uF	20%	10V		C392	1-126-206-11	ELECT CHIP 100uF	20%	6.3V	
C313	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C393	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C315	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C394	1-126-206-11	ELECT CHIP 100uF	20%	6.3V	
						C395	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C316	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C396	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C318	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V							
C319	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C397	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C320	1-126-205-11	ELECT CHIP 47uF	20%	6.3V		C398	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C321	1-162-918-11	CERAMIC CHIP 18PF	5%	50V		C399	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
						C400	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C322	1-162-919-11	CERAMIC CHIP 22PF	5%	50V		C401	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C323	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V							
C324	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C402	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C325	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C403	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C326	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V		C404	1-128-004-11	ELECT CHIP 10uF	20%	16V	
						C405	1-107-686-11	TANTAL. CHIP 4.7uF	20%	16V	
C327	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C406	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
		(US/Canadian)									
C328	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C407	1-104-851-11	TANTAL. CHIP 10uF	20%	10V	
		(US/Canadian)				C408	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C329	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C409	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
		(US/Canadian)				C410	1-164-505-11	CERAMIC CHIP 2.2uF		16V	
C330	1-104-851-11	TANTAL. CHIP 10uF	20%	10V		C411	1-104-851-11	TANTAL. CHIP 10uF	20%	10V	
		(US/Canadian)									
C331	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V		C415	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
		(US/Canadian)				C416	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
						C417	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
						C418	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
C419	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C501	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C420	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C502	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C426	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C505	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C427	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C506	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C429	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C430	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C510	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C431	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C433	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	C512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C434	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C435	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C439	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C515	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C440	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C441	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C517	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C442	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C518	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C443	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C519	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C444	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C520	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C446	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C522	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C447	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C523	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C448	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C524	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C449	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	C525	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C450	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	C526	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C451	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C527	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C452	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C453	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C454	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C455	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	C531	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C456	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C532	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C457	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C533	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C458	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C534	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C459	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C535	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C460	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C536	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C461	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C537	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C462	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C538	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C463	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C539	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C465	1-128-006-11	ELECT CHIP	4.7uF	20%	25V	C540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C466	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C541	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C467	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C542	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C468	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C543	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C469	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C544	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C475	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C545	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C476	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C546	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C477	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C547	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C480	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C548	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C481	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C549	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C483	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C550	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C484	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C552	1-128-004-11	ELECT CHIP	10uF	20%	16V
C486	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C554	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C487	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C555	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C490	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C558	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C492	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C573	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C493	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C574	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C494	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	C575	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C495	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C576	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C496	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C577	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C497	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	C580	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C498	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C581	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C499	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V	C583	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C500	1-104-852-11	TANTAL. CHIP	22uF	20%	10V	C585	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
						C586	1-128-596-11	ELECT CHIP	3.3uF	20%	50V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C587	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C647	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C588	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C648	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C589	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	C649	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C590	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C650	1-164-346-11	CERAMIC CHIP 1uF	16V
C591	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C651	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C592	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	C652	1-164-217-11	CERAMIC CHIP 150PF 5%	50V
C593	1-164-346-11	CERAMIC CHIP 1uF	16V	C653	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C594	1-164-346-11	CERAMIC CHIP 1uF	16V	C654	1-164-217-11	CERAMIC CHIP 150PF 5%	50V
C595	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	C655	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C596	1-162-962-11	CERAMIC CHIP 470PF 10%	50V	C656	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C597	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C657	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C598	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	C658	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C599	1-164-346-11	CERAMIC CHIP 1uF	16V	C659	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C600	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C660	1-164-346-11	CERAMIC CHIP 1uF	16V
C601	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	C662	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C602	1-162-962-11	CERAMIC CHIP 470PF 10%	50V	C663	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C603	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V	C664	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C604	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C674	1-162-965-11	CERAMIC CHIP 0.0015uF 10%	50V
C605	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V	C675	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C606	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C676	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C607	1-164-346-11	CERAMIC CHIP 1uF	16V	C677	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C608	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V	C678	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V
C609	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C679	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C610	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C801	1-104-852-11	TANTAL. CHIP 22uF 20%	10V
C611	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C802	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C612	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C803	1-104-852-11	TANTAL. CHIP 22uF 20%	10V
C613	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C804	1-104-852-11	TANTAL. CHIP 22uF 20%	10V
C614	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C805	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C615	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C806	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C616	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C807	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C617	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C808	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C618	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C810	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C619	1-164-346-11	CERAMIC CHIP 1uF	16V	C811	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C620	1-126-204-11	ELECT CHIP 47uF 20%	16V	C812	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C621	1-164-346-11	CERAMIC CHIP 1uF	16V	C813	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C622	1-126-204-11	ELECT CHIP 47uF 20%	16V	C814	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C623	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C815	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C624	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C816	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C625	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C817	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C626	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C818	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C627	1-164-346-11	CERAMIC CHIP 1uF	16V	C819	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C628	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C820	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C629	1-128-004-11	ELECT CHIP 10uF 20%	16V	C821	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C630	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C822	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C633	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C823	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C634	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C901	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C635	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C902	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C636	1-164-346-11	CERAMIC CHIP 1uF	16V	C903	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C637	1-126-204-11	ELECT CHIP 47uF 20%	16V	C904	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C638	1-164-156-11	CERAMIC CHIP 0.1uF	25V	< CONNECTOR >			
C639	1-164-156-11	CERAMIC CHIP 0.1uF	25V	* CN001	1-564-515-11	PLUG, CONNECTOR 12P	
C640	1-164-156-11	CERAMIC CHIP 0.1uF	25V	CN005	1-774-767-11	CONNECTOR, FFC/FPC 15P	
C641	1-164-156-11	CERAMIC CHIP 0.1uF	25V	CN008	1-573-806-21	PIN, CONNECTOR (1.5MM) (SMD)6P	
C642	1-164-156-11	CERAMIC CHIP 0.1uF	16V	CN009	1-779-344-11	CONNECTOR, FFC/FPC 20P	
C643	1-164-346-11	CERAMIC CHIP 1uF	16V	* CN135	1-573-304-11	CONNECTOR, BOARD TO BOARD 8P	
C644	1-164-346-11	CERAMIC CHIP 1uF	16V	CN381	1-774-766-11	CONNECTOR, FFC/FPC 11P	
C645	1-126-204-11	ELECT CHIP 47uF 20%	16V				
C646	1-164-346-11	CERAMIC CHIP 1uF	16V				

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* CN382	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P				< FILTER >	
* CN717	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P					
* CN760	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P					
CN885	1-779-343-11	CONNECTOR, FFC/FPC 23P		FL001	1-233-893-21	FILTER, CHIP EMI	
CN886	1-779-343-11	CONNECTOR, FFC/FPC 23P		FL002	1-233-893-21	FILTER, CHIP EMI	
CN980	1-779-343-11	CONNECTOR, FFC/FPC 23P		FL003	1-239-400-11	FILTER, CHIP EMI	
* CN981	1-766-383-11	PIN, CONNECTOR (1.5MM)(SMD)12P		FL004	1-239-400-11	FILTER, CHIP EMI	
		< TRIMMER >		FL005	1-233-893-21	FILTER, CHIP EMI	
CT001	1-141-422-11	CAP, ADJ 10PF		FL006	1-233-893-21	FILTER, CHIP EMI	
CT002	1-141-422-11	CAP, ADJ 10PF		FL007	1-239-400-11	FILTER, CHIP EMI	
		< DIODE >		FL008	1-233-893-21	FILTER, CHIP EMI	
D001	8-719-055-86	DIODE KV1470TL1-3		FL009	1-233-893-21	FILTER, CHIP EMI	
D037	8-719-420-14	DIODE MA8082-M		FL010	1-239-400-11	FILTER, CHIP EMI	
D038	8-719-422-58	DIODE MA8062-TX		FL011	1-233-893-21	FILTER, CHIP EMI	
D039	8-719-404-49	DIODE MA111 (E)		FL012	1-239-400-11	FILTER, CHIP EMI	
D040	8-719-404-49	DIODE MA111 (E)		FL013	1-233-893-21	FILTER, CHIP EMI	
D476	8-719-404-49	DIODE MA111		FL014	1-233-893-21	FILTER, CHIP EMI	
D500	8-719-404-49	DIODE MA111		FL015	1-239-400-11	FILTER, CHIP EMI	
D601	8-719-404-49	DIODE MA111		FL016	1-233-893-21	FILTER, CHIP EMI	
D766	8-719-421-27	DIODE MA728		FL033	1-233-893-21	FILTER, CHIP EMI	
D886	8-719-404-49	DIODE MA111		FL034	1-233-893-21	FILTER, CHIP EMI	
		< IC LINK >		FL035	1-233-893-21	FILTER, CHIP EMI	
F001	1-533-710-11	IC LINK (SMD)		FL036	1-239-400-11	FILTER, CHIP EMI	
F003	1-533-771-21	IC LINK (SMD)		FL037	1-239-400-11	FILTER, CHIP EMI	
F005	1-533-771-21	IC LINK (SMD)		FL038	1-239-400-11	FILTER, CHIP EMI	
F006	1-533-710-11	IC LINK (SMD)		FL039	1-233-893-21	FILTER, CHIP EMI	
F007	1-533-710-11	IC LINK (SMD)		FL090	1-233-893-21	FILTER, CHIP EMI	
F008	1-533-710-11	IC LINK (SMD)		FL091	1-233-893-21	FILTER, CHIP EMI	
F009	1-533-710-11	IC LINK (SMD)		FL092	1-233-893-21	FILTER, CHIP EMI	
F010	1-533-771-21	IC LINK (SMD)		FL093	1-233-893-21	FILTER, CHIP EMI	
F805	1-533-855-21	IC LINK (SMD)		FL135	1-233-893-21	FILTER, CHIP EMI	
F806	1-533-855-21	IC LINK (SMD)		FL136	1-233-893-21	FILTER, CHIP EMI	
		< FERRITE BEAD >		FL137	1-233-893-21	FILTER, CHIP EMI	
FB002	1-414-553-11	INDUCTOR 0UH		FL138	1-233-893-21	FILTER, CHIP EMI	
FB003	1-414-553-11	INDUCTOR 0UH		FL139	1-233-893-21	FILTER, CHIP EMI	
FB004	1-414-553-11	INDUCTOR 0UH		FL180	1-233-893-21	FILTER, CHIP EMI	
FB005	1-414-553-11	INDUCTOR 0UH		FL181	1-233-893-21	FILTER, CHIP EMI	
FB006	1-414-553-11	INDUCTOR 0UH		FL182	1-233-893-21	FILTER, CHIP EMI	
FB008	1-414-553-11	INDUCTOR 0UH		FL183	1-239-400-11	FILTER, CHIP EMI	
FB015	1-414-553-11	INDUCTOR 0UH		FL184	1-239-400-11	FILTER, CHIP EMI	
FB048	1-500-283-11	INDUCTOR, FERRITE BEAD		FL215	1-233-893-21	FILTER, CHIP EMI	
FB049	1-500-283-11	INDUCTOR, FERRITE BEAD		FL216	1-233-893-21	FILTER, CHIP EMI	
FB050	1-500-283-11	INDUCTOR, FERRITE BEAD		FL217	1-233-893-21	FILTER, CHIP EMI	
FB051	1-500-283-11	INDUCTOR, FERRITE BEAD		FL280	1-233-893-21	FILTER, CHIP EMI	
FB053	1-500-283-11	INDUCTOR, FERRITE BEAD		FL281	1-233-893-21	FILTER, CHIP EMI	
FB054	1-500-283-11	INDUCTOR, FERRITE BEAD		FL282	1-233-893-21	FILTER, CHIP EMI	
FB055	1-500-283-11	INDUCTOR, FERRITE BEAD		FL283	1-233-893-21	FILTER, CHIP EMI	
FB056	1-500-283-11	INDUCTOR, FERRITE BEAD		FL284	1-233-893-21	FILTER, CHIP EMI	
FB059	1-500-283-11	INDUCTOR, FERRITE BEAD		FL285	1-233-893-21	FILTER, CHIP EMI	
FB060	1-500-283-11	INDUCTOR, FERRITE BEAD		FL310	1-233-893-21	FILTER, CHIP EMI	
FB061	1-500-283-11	INDUCTOR, FERRITE BEAD		FL311	1-233-893-21	FILTER, CHIP EMI	
FB180	1-412-390-21	INDUCTOR CHIP 0uH		FL312	1-233-893-21	FILTER, CHIP EMI	
FB181	1-412-390-21	INDUCTOR CHIP 0uH		FL313	1-233-893-21	FILTER, CHIP EMI	
				FL314	1-233-893-21	FILTER, CHIP EMI	
				FL315	1-233-893-21	FILTER, CHIP EMI	
				FL316	1-233-893-21	FILTER, CHIP EMI	
				FL380	1-233-893-21	FILTER, CHIP EMI	
				FL381	1-233-893-21	FILTER, CHIP EMI	
				FL382	1-233-893-21	FILTER, CHIP EMI	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
FL383	1-239-400-11	FILTER, CHIP EMI		IC136	8-759-427-97	IC HD6413002F17	
FL384	1-239-400-11	FILTER, CHIP EMI		IC137	8-759-344-37	IC MC74AC138MEL	
FL475	1-233-893-21	FILTER, CHIP EMI		IC138	8-759-449-35	IC HM62256BLFP-7	
FL476	1-233-893-21	FILTER, CHIP EMI		IC139	8-759-357-58	IC AK6420HM-E2	
				IC141	8-759-423-49	IC MC74F125MEL	
FL477	1-239-400-11	FILTER, CHIP EMI		IC142	8-759-351-13	IC TC74AC541FS(EL)	
FL478	1-233-894-21	FILTER, LOW PASS (14MHz)		IC143	8-759-344-37	IC MC74AC138MEL	
FL479	1-233-894-21	FILTER, LOW PASS (14MHz)		IC144	8-759-423-32	IC MC74AC32MEL	
FL480	1-233-893-21	FILTER, CHIP EMI		IC145	8-759-423-49	IC MC74F125MEL	
FL481	1-233-893-21	FILTER, CHIP EMI		IC146	8-759-096-87	IC TC7WU04FU(T(E)R)	
FL482	1-239-400-11	FILTER, CHIP EMI		IC147	8-759-270-56	IC SN74HC377ANS-E20	
FL483	1-239-400-11	FILTER, CHIP EMI		IC148	8-759-270-56	IC SN74HC377ANS-E20	
FL716	1-233-893-21	FILTER, CHIP EMI		IC149	8-759-270-56	IC SN74HC377ANS-E20	
FL717	1-233-893-21	FILTER, CHIP EMI		IC150	8-759-270-56	IC SN74HC377ANS-E20	
FL718	1-233-893-21	FILTER, CHIP EMI		IC151	8-759-351-13	IC TC74AC541FS(EL)	
		< IC >		IC152	8-759-351-13	IC TC74AC541FS(EL)	
IC002	8-759-449-38	IC MSM10S0050-039GS-2K		IC153	8-759-058-58	IC TC7S04FU(TE85R)	
IC003	8-759-431-14	IC PQ3TZ53U		IC154	8-759-058-62	IC TC7S08FU(TE85R)	
IC004	8-759-510-71	IC BA10358F-E2		IC156	8-759-058-62	IC TC7S08FU(TE85R)	
IC005	8-759-431-14	IC PQ3TZ53U		IC180	8-759-423-33	IC MC74AC74MEL	
IC006	8-759-981-48	IC RC082M2G2		IC181	8-759-460-93	IC CXD8663Q	
IC008	8-759-271-88	IC TC7SHU04FU-TE85R		IC182	8-759-463-74	IC HM514800CLTT-7Z	
IC009	8-759-271-88	IC TC7SHU04FU-TE85R		IC183	8-759-196-97	IC TC7SH32FU-TE85R	
IC010	8-759-447-77	IC TC7WH74FU(TR12R)		IC184	8-759-460-94	IC CXD8669AQ	
IC011	8-759-447-77	IC TC7WH74FU(TR12R)		IC185	8-759-082-57	IC TC7W04FU(T(E)R)	
IC012	8-759-081-44	IC TC74VHC04F(EL)		IC215	8-759-449-35	IC HM62256BLFP-7	
IC014	8-759-711-58	IC NJM78L05UA		IC216	8-752-363-62	IC CXD1186CQ	
IC015	8-759-434-20	IC PST572DML		IC217	8-759-449-40	IC CXD8598R	
IC016	8-759-423-49	IC MC74F125MEL		IC219	8-759-423-49	IC MC74F125MEL	
IC017	8-759-058-58	IC TC7S04FU(TE85R)		IC280	8-759-463-75	IC HM514260CTT-7Z	
IC019	8-759-449-37	IC MSM10S0050-041GS-K		IC281	8-752-386-59	IC CXD1900BQ	
IC020	8-759-510-71	IC BA10358F-E2		IC282	8-759-463-75	IC HM514260CTT-7Z	
IC021	8-759-473-19	IC MB89099PF-G-117-BND (US/Canadian)		IC283	8-759-463-75	IC HM514260CTT-7Z	
IC021	8-759-473-20	IC MB89099PF-G-118-BND (E)		IC284	8-759-463-75	IC HM514260CTT-7Z	
IC022	8-759-356-27	IC NJM2129M-TE2 (US/Canadian)		IC310	8-759-449-39	IC CXD8602Q	
IC024	8-759-196-97	IC TC7SH32FU-TE85R		IC311	8-759-350-08	IC MSM518222B-30GS-TP	
IC025	8-759-196-93	IC TC7SH00FU-TE85R		IC312	8-759-449-45	IC CXD8600R	
IC026	8-759-196-93	IC TC7SH00FU-TE85R		IC313	8-759-449-34	IC HM628128ALFP-5	
IC027	8-759-271-86	IC TC7SH04FU-TE85R		IC315	8-759-186-39	IC TC74VHC74F(EL)	
IC028	8-759-271-86	IC TC7SH04FU-TE85R		IC316	8-759-442-77	IC MSM518126-50JSDR1	
IC090	8-759-449-31	IC HD6437034SD13F		IC317	8-759-453-79	IC CXD8664Q	
IC091	8-759-083-94	IC TC7W74FU(T(E)R)		IC318	8-752-381-72	IC CXD1853Q	
IC092	8-759-058-62	IC TC7S08FU(TE85R)		IC319	8-759-449-34	IC HM628128ALFP-5	
IC094	8-759-449-34	IC HM628128ALFP-5		IC380	8-759-471-51	IC CXD8603AR	
IC095	8-759-344-37	IC MC74AC138MEL		IC381	8-759-449-42	IC DSP56009	
IC096	8-759-423-32	IC MC74AC32MEL		IC382	8-759-082-57	IC TC7W04FU(T(E)R)	
IC097	8-759-096-87	IC TC7WU04FU(T(E)R)		IC383	8-759-449-35	IC HM62256BLFP-7	
IC098	8-759-423-49	IC MC74F125MEL		IC385	8-759-058-62	IC TC7S08FU(TE85R)	
IC099	8-759-351-13	IC TC74AC541FS(EL)		IC474	8-759-711-58	IC NJM78L05UA	
IC100	8-759-423-38	IC MC74ACT245MEL		IC475	8-752-379-07	IC CXD1914Q	
IC101	8-759-423-38	IC MC74ACT245MEL		IC482	8-759-066-59	IC TC74HC4053AFS-EL	
IC102	8-759-423-49	IC MC74F125MEL		IC483	8-759-066-59	IC TC74HC4053AFS-EL	
IC103	8-759-423-33	IC MC74AC74MEL		IC485	8-759-066-59	IC TC74HC4053AFS-EL	
IC104	8-759-351-13	IC TC74AC541FS(EL)		IC486	8-759-066-59	IC TC74HC4053AFS-EL	
IC105	8-759-351-13	IC TC74AC541FS(EL)		IC487	8-759-066-59	IC TC74HC4053AFS-EL	
IC106	8-759-423-38	IC MC74ACT245MEL		IC491	8-759-449-30	IC MB90091APF-G-001-BND	
IC108	8-759-058-64	IC TC7S32FU(TE85R)					
IC109	8-759-058-64	IC TC7S32FU(TE85R)					
IC135	8-759-351-13	IC TC74AC541FS(EL)					

MB-75

8-18

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q530	8-729-230-63	TRANSISTOR 2SC4116-YG		< RESISTOR >			
Q531	8-729-230-63	TRANSISTOR 2SC4116-YG		R002	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q532	8-729-230-63	TRANSISTOR 2SC4116-YG		R003	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q533	8-729-230-63	TRANSISTOR 2SC4116-YG		R004	1-216-857-11	METAL CHIP 1M 5%	1/16W
Q534	8-729-230-63	TRANSISTOR 2SC4116-YG		R005	1-216-801-11	METAL CHIP 22 5%	1/16W
Q535	8-729-143-13	TRANSISTOR 2SC4176-B34		R006	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q538	8-729-143-13	TRANSISTOR 2SC4176-B34		R007	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q539	8-729-143-13	TRANSISTOR 2SC4176-B34		R008	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q540	8-729-143-07	TRANSISTOR 2SA1610-Y33		R009	1-216-801-11	METAL CHIP 22 5%	1/16W
Q542	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R010	1-216-857-11	METAL CHIP 1M 5%	1/16W
Q543	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R011	1-216-801-11	METAL CHIP 22 5%	1/16W
Q544	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R012	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q545	8-729-230-63	TRANSISTOR 2SC4116-YG		R013	1-216-801-11	METAL CHIP 22 5%	1/16W
Q546	8-729-230-63	TRANSISTOR 2SC4116-YG		R014	1-216-793-11	METAL GLAZE 4.7 5%	1/16W
Q547	8-729-230-63	TRANSISTOR 2SC4116-YG		R015	1-216-793-11	METAL GLAZE 4.7 5%	1/16W
Q551	8-729-230-63	TRANSISTOR 2SC4116-YG		R016	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q552	8-729-403-35	TRANSISTOR UN5113		R017	1-216-801-11	METAL CHIP 22 5%	1/16W
Q557	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R020	1-216-801-11	METAL CHIP 22 5%	1/16W
Q558	8-729-230-63	TRANSISTOR 2SC4116-YG		R021	1-216-817-11	METAL CHIP 470 5%	1/16W
Q559	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R022	1-216-801-11	METAL CHIP 22 5%	1/16W
Q560	8-729-230-63	TRANSISTOR 2SC4116-YG		R023	1-216-857-11	METAL CHIP 1M 5%	1/16W
Q561	8-729-230-63	TRANSISTOR 2SC4116-YG		R024	1-216-805-11	METAL CHIP 47 5%	1/16W
Q562	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R025	1-218-871-11	METAL GLAZE 10K 0.50%	1/16W
Q563	8-729-230-63	TRANSISTOR 2SC4116-YG		R026	1-218-871-11	METAL GLAZE 10K 0.50%	1/16W
Q564	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R027	1-216-845-11	METAL CHIP 100K 5%	1/16W
Q565	8-729-230-63	TRANSISTOR 2SC4116-YG		R028	1-216-845-11	METAL CHIP 100K 5%	1/16W
Q566	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R030	1-216-837-11	METAL CHIP 22K 5%	1/16W
Q567	8-729-230-63	TRANSISTOR 2SC4116-YG		R031	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
Q568	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R032	1-216-809-11	METAL CHIP 100 5%	1/16W
Q569	8-729-230-63	TRANSISTOR 2SC4116-YG		R033	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
Q570	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R034	1-216-841-11	METAL CHIP 47K 5%	1/16W
Q571	8-729-230-63	TRANSISTOR 2SC4116-YG		R035	1-216-813-11	METAL CHIP 220 5%	1/16W
Q572	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R036	1-216-842-11	METAL CHIP 56K 5%	1/16W
Q573	8-729-230-63	TRANSISTOR 2SC4116-YG		R037	1-216-839-11	METAL CHIP 33K 5%	1/16W
Q574	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R038	1-216-837-11	METAL CHIP 22K 5%	1/16W
Q575	8-729-230-63	TRANSISTOR 2SC4116-YG		R039	1-216-837-11	METAL CHIP 22K 5%	1/16W
Q576	8-729-230-63	TRANSISTOR 2SC4116-YG		R041	1-216-198-91	METAL GLAZE 1K 5%	1/8W
Q577	8-729-230-63	TRANSISTOR 2SC4116-YG		R042	1-216-815-11	METAL CHIP 330 5%	1/16W
Q578	8-729-230-63	TRANSISTOR 2SC4116-YG		R043	1-216-198-91	METAL GLAZE 1K 5%	1/8W
Q579	8-729-230-63	TRANSISTOR 2SC4116-YG		R044	1-216-198-91	METAL GLAZE 1K 5%	1/8W
Q580	8-729-230-63	TRANSISTOR 2SC4116-YG		R045	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
Q581	8-729-230-63	TRANSISTOR 2SC4116-YG		R046	1-216-803-11	METAL CHIP 33 5%	1/16W
Q582	8-729-230-63	TRANSISTOR 2SC4116-YG		R047	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q583	8-729-230-63	TRANSISTOR 2SC4116-YG		R052	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q584	8-729-230-63	TRANSISTOR 2SC4116-YG		R057	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q585	8-729-230-63	TRANSISTOR 2SC4116-YG		R058	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q586	8-729-230-63	TRANSISTOR 2SC4116-YG		R062	1-216-797-11	METAL CHIP 10 5%	1/16W
Q587	8-729-230-63	TRANSISTOR 2SC4116-YG		R063	1-216-820-11	METAL CHIP 820 5%	1/16W
Q588	8-729-230-63	TRANSISTOR 2SC4116-YG		R067	1-216-801-11	METAL CHIP 22 5%	1/16W
Q589	8-729-230-63	TRANSISTOR 2SC4116-YG		R068	1-216-801-11	METAL CHIP 22 5%	1/16W
Q765	8-729-230-63	TRANSISTOR 2SC4116-YG		R074	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q766	8-729-015-76	TRANSISTOR UN5211-TX		R075	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q886	8-729-230-63	TRANSISTOR 2SC4116-YG		R076	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q887	8-729-403-35	TRANSISTOR UN5113		R077	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q888	8-729-230-63	TRANSISTOR 2SC4116-YG		R078	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q889	8-729-922-77	TRANSISTOR 2SB1412-TL		R079	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q980	8-729-015-76	TRANSISTOR UN5211-TX		R080	1-216-833-11	METAL CHIP 10K 5%	1/16W

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R081	1-216-809-11	METAL CHIP	100	5%	1/16W	R142	1-216-833-11	METAL CHIP	10K	5%	1/16W
R082	1-216-833-11	METAL CHIP	10K	5%	1/16W	R143	1-216-833-11	METAL CHIP	10K	5%	1/16W
R083	1-216-809-11	METAL CHIP	100	5%	1/16W	R144	1-216-833-11	METAL CHIP	10K	5%	1/16W
R084	1-216-833-11	METAL CHIP	10K	5%	1/16W	R145	1-216-841-11	METAL CHIP	47K	5%	1/16W
R085	1-216-809-11	METAL CHIP	100	5%	1/16W	R146	1-216-801-11	METAL CHIP	22	5%	1/16W
R086	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R147	1-216-845-11	METAL CHIP	100K	5%	1/16W
R087	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R148	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R088	1-216-833-11	METAL CHIP	10K	5%	1/16W	R149	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R089	1-216-833-11	METAL CHIP	10K	5%	1/16W	R150	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R090	1-216-833-11	METAL CHIP	10K	5%	1/16W	R151	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R091	1-216-833-11	METAL CHIP	10K	5%	1/16W	R153	1-216-845-11	METAL CHIP	100K	5%	1/16W
R092	1-216-837-11	METAL CHIP	22K	5%	1/16W	R154	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R093	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R155	1-216-809-11	METAL CHIP	100	5%	1/16W
R094	1-216-833-11	METAL CHIP	10K	5%	1/16W	R156	1-216-801-11	METAL CHIP	22	5%	1/16W
R095	1-216-833-11	METAL CHIP	10K	5%	1/16W	R157	1-216-801-11	METAL CHIP	22	5%	1/16W
R096	1-216-809-11	METAL CHIP	100	5%	1/16W	R158	1-216-821-11	METAL CHIP	1K	5%	1/16W
R097	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R160	1-216-809-11	METAL CHIP	100	5%	1/16W
R098	1-216-857-11	METAL CHIP	1M	5%	1/16W	R161	1-216-809-11	METAL CHIP	100	5%	1/16W
R099	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R162	1-216-809-11	METAL CHIP	100	5%	1/16W
R100	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R163	1-218-484-11	METAL GLAZE	750	5%	1/16W
R101	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R165	1-216-813-11	METAL CHIP	220	5%	1/16W
R102	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R166	1-216-813-11	METAL CHIP	220	5%	1/16W
R103	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R167	1-218-484-11	METAL GLAZE	750	5%	1/16W
R104	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R168	1-216-803-11	METAL CHIP	33	5%	1/16W
R105	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R169	1-216-803-11	METAL CHIP	33	5%	1/16W
R106	1-216-801-11	METAL CHIP	22	5%	1/16W	R170	1-216-803-11	METAL CHIP	33	5%	1/16W
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W	R171	1-216-803-11	METAL CHIP	33	5%	1/16W
R108	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R172	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R110	1-216-864-11	METAL CHIP	0	5%	1/16W	R173	1-216-821-11	METAL CHIP	1K	5%	1/16W
R111	1-216-833-11	METAL CHIP	10K	5%	1/16W	R174	1-216-821-11	METAL CHIP	1K	5%	1/16W
R112	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R175	1-216-821-11	METAL CHIP	1K	5%	1/16W
R113	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R176	1-216-821-11	METAL CHIP	1K	5%	1/16W
R114	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R177	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R115	1-216-864-11	METAL CHIP	0	5%	1/16W	R178	1-216-295-91	CONDUCTOR, CHIP (2012)			
R116	1-216-864-11	METAL CHIP	0	5%	1/16W	R179	1-216-821-11	METAL CHIP	1K	5%	1/16W
R117	1-216-833-11	METAL CHIP	10K	5%	1/16W	R181	1-216-821-11	METAL CHIP	1K	5%	1/16W
R118	1-216-845-11	METAL CHIP	100K	5%	1/16W	R182	1-216-821-11	METAL CHIP	1K	5%	1/16W
R119	1-216-809-11	METAL CHIP	100	5%	1/16W	R183	1-216-821-11	METAL CHIP	1K	5%	1/16W
R120	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R184	1-216-821-11	METAL CHIP	1K	5%	1/16W
R121	1-216-845-11	METAL CHIP	100K	5%	1/16W	R185	1-216-833-11	METAL CHIP	10K	5%	1/16W
R122	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R186	1-216-833-11	METAL CHIP	10K	5%	1/16W
R123	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R187	1-216-864-11	METAL CHIP	0	5%	1/16W
R124	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R188	1-216-864-11	METAL CHIP	0	5%	1/16W
R125	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R190	1-216-864-11	METAL CHIP	0	5%	1/16W
R126	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R192	1-216-864-11	METAL CHIP	0	5%	1/16W
R127	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R195	1-216-801-11	METAL CHIP	22	5%	1/16W
R128	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R196	1-216-833-11	METAL CHIP	10K	5%	1/16W
R129	1-216-841-11	METAL CHIP	47K	5%	1/16W	R197	1-216-833-11	METAL CHIP	10K	5%	1/16W
R130	1-216-841-11	METAL CHIP	47K	5%	1/16W	R198	1-216-833-11	METAL CHIP	10K	5%	1/16W
R131	1-216-841-11	METAL CHIP	47K	5%	1/16W	R199	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-841-11	METAL CHIP	47K	5%	1/16W	R200	1-216-833-11	METAL CHIP	10K	5%	1/16W
R133	1-216-821-11	METAL CHIP	1K	5%	1/16W	R201	1-216-833-11	METAL CHIP	10K	5%	1/16W
R134	1-216-821-11	METAL CHIP	1K	5%	1/16W	R202	1-216-809-11	METAL CHIP	100	5%	1/16W
R135	1-216-821-11	METAL CHIP	1K	5%	1/16W	R203	1-216-864-11	METAL CHIP	0	5%	1/16W
R136	1-216-821-11	METAL CHIP	1K	5%	1/16W	R204	1-216-801-11	METAL CHIP	22	5%	1/16W
R137	1-216-821-11	METAL CHIP	1K	5%	1/16W	R205	1-216-801-11	METAL CHIP	22	5%	1/16W
R138	1-216-821-11	METAL CHIP	1K	5%	1/16W	R206	1-216-809-11	METAL CHIP	100	5%	1/16W
R139	1-216-821-11	METAL CHIP	1K	5%	1/16W	R208	1-216-864-11	METAL CHIP	0	5%	1/16W
R141	1-216-833-11	METAL CHIP	10K	5%	1/16W						

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R333	1-216-841-11	METAL CHIP	47K	5%	1/16W (E)	R384	1-216-825-11	METAL CHIP	2.2K	5%	1/16W (E)
R334	1-216-864-11	METAL CHIP	0	5%	1/16W (US/Canadian)	R385	1-216-851-11	METAL CHIP	330K	5%	1/16W
R334	1-216-821-11	METAL CHIP	1K	5%	1/16W (E)	R386	1-216-809-11	METAL CHIP	100	5%	1/16W
R335	1-216-833-11	METAL CHIP	10K	5%	1/16W	R387	1-216-841-11	METAL CHIP	47K	5%	1/16W
R336	1-216-821-11	METAL CHIP	1K	5%	1/16W	R388	1-216-833-11	METAL CHIP	10K	5%	1/16W
R337	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R389	1-216-801-11	METAL CHIP	22	5%	1/16W
R338	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R392	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R339	1-216-801-11	METAL CHIP	22	5%	1/16W	R393	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R340	1-216-801-11	METAL CHIP	22	5%	1/16W	R394	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R341	1-216-801-11	METAL CHIP	22	5%	1/16W	R395	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R342	1-216-817-11	METAL CHIP	470	5%	1/16W	R396	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R343	1-216-864-11	METAL CHIP	0	5%	1/16W	R397	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R344	1-216-864-11	METAL CHIP	0	5%	1/16W	R398	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R345	1-216-821-11	METAL CHIP	1K	5%	1/16W	R399	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R346	1-216-845-11	METAL CHIP	100K	5%	1/16W	R413	1-216-864-11	METAL CHIP	0	5%	1/16W
R347	1-216-845-11	METAL CHIP	100K	5%	1/16W	R414	1-216-864-11	METAL CHIP	0	5%	1/16W
R348	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W	R415	1-216-864-11	METAL CHIP	0	5%	1/16W
R349	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W	R416	1-216-864-11	METAL CHIP	0	5%	1/16W
R350	1-218-854-11	METAL GLAZE	2K	0.50%	1/16W	R417	1-216-864-11	METAL CHIP	0	5%	1/16W
R351	1-218-854-11	METAL GLAZE	2K	0.50%	1/16W	R418	1-216-864-11	METAL CHIP	0	5%	1/16W
R352	1-218-854-11	METAL GLAZE	2K	0.50%	1/16W	R419	1-216-864-11	METAL CHIP	0	5%	1/16W
R353	1-218-847-11	METAL GLAZE	1K	0.50%	1/16W	R420	1-216-864-11	METAL CHIP	0	5%	1/16W
R354	1-218-876-11	METAL GLAZE	16K	0.50%	1/16W	R421	1-216-805-11	METAL CHIP	47	5%	1/16W
R355	1-218-847-11	METAL GLAZE	1K	0.50%	1/16W	R422	1-216-805-11	METAL CHIP	47	5%	1/16W
R356	1-218-843-11	METAL GLAZE	680	0.50%	1/16W	R423	1-216-864-11	METAL CHIP	0	5%	1/16W
R357	1-216-821-11	METAL CHIP	1K	5%	1/16W	R424	1-216-864-11	METAL CHIP	0	5%	1/16W
R358	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W	R425	1-216-864-11	METAL CHIP	0	5%	1/16W
R359	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W	R426	1-216-833-11	METAL CHIP	10K	5%	1/16W
R360	1-216-821-11	METAL CHIP	1K	5%	1/16W	R427	1-216-864-11	METAL CHIP	0	5%	1/16W
R361	1-216-833-11	METAL CHIP	10K	5%	1/16W	R428	1-216-864-11	METAL CHIP	0	5%	1/16W
R362	1-216-833-11	METAL CHIP	10K	5%	1/16W	R429	1-216-864-11	METAL CHIP	0	5%	1/16W
R363	1-216-833-11	METAL CHIP	10K	5%	1/16W	R430	1-216-864-11	METAL CHIP	0	5%	1/16W
R364	1-216-821-11	METAL CHIP	1K	5%	1/16W	R431	1-216-864-11	METAL CHIP	0	5%	1/16W
R365	1-216-821-11	METAL CHIP	1K	5%	1/16W	R432	1-216-864-11	METAL CHIP	0	5%	1/16W
R366	1-216-821-11	METAL CHIP	1K	5%	1/16W	R433	1-216-801-11	METAL CHIP	22	5%	1/16W
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W	R434	1-216-801-11	METAL CHIP	22	5%	1/16W
R368	1-216-845-11	METAL CHIP	100K	5%	1/16W	R435	1-216-803-11	METAL CHIP	33	5%	1/16W
R369	1-216-833-11	METAL CHIP	10K	5%	1/16W	R436	1-216-803-11	METAL CHIP	33	5%	1/16W
R370	1-216-833-11	METAL CHIP	10K	5%	1/16W	R437	1-216-807-11	METAL CHIP	68	5%	1/16W
R371	1-216-833-11	METAL CHIP	10K	5%	1/16W	R438	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R372	1-216-805-11	METAL CHIP	47	5%	1/16W	R439	1-216-807-11	METAL CHIP	68	5%	1/16W
R373	1-216-805-11	METAL CHIP	47	5%	1/16W	R440	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R374	1-216-805-11	METAL CHIP	47	5%	1/16W	R441	1-216-807-11	METAL CHIP	68	5%	1/16W
R375	1-216-805-11	METAL CHIP	47	5%	1/16W	R442	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R376	1-216-809-11	METAL CHIP	100	5%	1/16W	R443	1-216-807-11	METAL CHIP	68	5%	1/16W
R377	1-216-809-11	METAL CHIP	100	5%	1/16W (US/Canadian)	R444	1-216-833-11	METAL CHIP	10K	5%	1/16W
R378	1-216-821-11	METAL CHIP	1K	5%	1/16W (US/Canadian)	R445	1-216-801-11	METAL CHIP	22	5%	1/16W
R379	1-216-821-11	METAL CHIP	1K	5%	1/16W (US/Canadian)	R446	1-216-805-11	METAL CHIP	47	5%	1/16W
R381	1-216-864-11	METAL CHIP	0	5%	1/16W (US/Canadian)	R447	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R382	1-216-809-11	METAL CHIP	100	5%	1/16W	R448	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R383	1-216-849-11	METAL CHIP	220K	5%	1/16W (E)	R449	1-216-809-11	METAL CHIP	100	5%	1/16W
						R450	1-216-821-11	METAL CHIP	1K	5%	1/16W
						R451	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
						R452	1-216-801-11	METAL CHIP	22	5%	1/16W
						R453	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
						R454	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
						R455	1-218-832-11	METAL GLAZE	240	0.50%	1/16W (US/Canadian)

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
R455	1-218-831-11	METAL GLAZE	220	0.50%	1/16W	(E)	R517	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R457	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		R518	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R458	1-216-821-11	METAL CHIP	1K	5%	1/16W		R519	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R459	1-216-797-11	METAL CHIP	10	5%	1/16W		R520	1-216-803-11	METAL CHIP	33	5%	1/16W	
R461	1-216-801-11	METAL CHIP	22	5%	1/16W		R521	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R462	1-216-821-11	METAL CHIP	1K	5%	1/16W		R522	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R463	1-218-831-11	METAL GLAZE	220	0.50%	1/16W		R523	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R464	1-216-801-11	METAL CHIP	22	5%	1/16W		R524	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R465	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		R525	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R466	1-216-805-11	METAL CHIP	47	5%	1/16W		R526	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R467	1-216-805-11	METAL CHIP	47	5%	1/16W		R527	1-216-803-11	METAL CHIP	33	5%	1/16W	
R469	1-218-832-11	METAL GLAZE	240	0.50%	1/16W		R528	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R469	1-218-831-11	(US/Canadian)				(E)	R529	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
		METAL GLAZE	220	0.50%	1/16W		R530	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R470	1-216-801-11	METAL CHIP	22	5%	1/16W		R531	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R471	1-216-805-11	METAL CHIP	47	5%	1/16W		R532	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R472	1-216-815-11	METAL CHIP	330	5%	1/16W		R533	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R473	1-216-805-11	METAL CHIP	47	5%	1/16W		R534	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R474	1-216-805-11	METAL CHIP	47	5%	1/16W		R535	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R475	1-218-831-11	METAL GLAZE	220	0.50%	1/16W		R536	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R476	1-216-807-11	METAL CHIP	68	5%	1/16W		R537	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R477	1-216-807-11	METAL CHIP	68	5%	1/16W		R538	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R478	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		R539	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R479	1-216-803-11	METAL CHIP	33	5%	1/16W		R540	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R480	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		R541	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R481	1-216-821-11	METAL CHIP	1K	5%	1/16W		R542	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R482	1-216-821-11	METAL CHIP	1K	5%	1/16W		R543	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R483	1-216-821-11	METAL CHIP	1K	5%	1/16W		R544	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R486	1-216-807-11	METAL CHIP	68	5%	1/16W		R545	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R488	1-216-807-11	METAL CHIP	68	5%	1/16W		R546	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R489	1-216-801-11	METAL CHIP	22	5%	1/16W		R547	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R490	1-216-803-11	METAL CHIP	33	5%	1/16W		R548	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R491	1-216-805-11	METAL CHIP	47	5%	1/16W		R549	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R492	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R550	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R493	1-216-823-11	METAL CHIP	1.5K	5%	1/16W		R551	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R494	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		R552	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R495	1-216-801-11	METAL CHIP	22	5%	1/16W		R553	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R496	1-216-807-11	METAL CHIP	68	5%	1/16W		R554	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R497	1-216-807-11	METAL CHIP	68	5%	1/16W		R555	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R498	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		R556	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R499	1-216-801-11	METAL CHIP	22	5%	1/16W		R557	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R500	1-216-807-11	METAL CHIP	68	5%	1/16W		R558	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R501	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		R559	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R503	1-216-807-11	METAL CHIP	68	5%	1/16W		R560	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R504	1-216-803-11	METAL CHIP	33	5%	1/16W		R561	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R505	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		R562	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R506	1-216-821-11	METAL CHIP	1K	5%	1/16W		R563	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R507	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		R564	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R508	1-216-807-11	METAL CHIP	68	5%	1/16W		R565	1-216-817-11	METAL CHIP	470	5%	1/16W	
R509	1-216-803-11	METAL CHIP	33	5%	1/16W		R566	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R510	1-216-803-11	METAL CHIP	33	5%	1/16W		R567	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R511	1-216-827-11	METAL CHIP	3.3K	5%	1/16W		R568	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R512	1-216-803-11	METAL CHIP	33	5%	1/16W		R569	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R513	1-216-803-11	METAL CHIP	33	5%	1/16W		R570	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R514	1-216-833-11	METAL CHIP	10K	5%	1/16W		R571	1-216-807-11	METAL CHIP	68	5%	1/16W	
R515	1-216-849-11	METAL CHIP	220K	5%	1/16W		R572	1-216-807-11	METAL CHIP	68	5%	1/16W	
R516	1-216-849-11	METAL CHIP	220K	5%	1/16W		R573	1-216-807-11	METAL CHIP	68	5%	1/16W	
							R574	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R575	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R635	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R576	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R642	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R577	1-216-807-11	METAL CHIP	68	5%	1/16W						
R578	1-216-807-11	METAL CHIP	68	5%	1/16W	R643	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R579	1-216-807-11	METAL CHIP	68	5%	1/16W	R644	1-216-809-11	METAL CHIP	100	5%	1/16W
R580	1-216-807-11	METAL CHIP	68	5%	1/16W	R645	1-216-845-11	METAL CHIP	100K	5%	1/16W
R581	1-216-807-11	METAL CHIP	68	5%	1/16W	R646	1-216-801-11	METAL CHIP	22	5%	1/16W
R582	1-216-807-11	METAL CHIP	68	5%	1/16W	R647	1-216-801-11	METAL CHIP	22	5%	1/16W
R583	1-216-803-11	METAL CHIP	33	5%	1/16W	R648	1-216-801-11	METAL CHIP	22	5%	1/16W
R584	1-216-803-11	METAL CHIP	33	5%	1/16W	R649	1-216-801-11	METAL CHIP	22	5%	1/16W
R585	1-216-803-11	METAL CHIP	33	5%	1/16W	R650	1-216-841-11	METAL CHIP	47K	5%	1/16W
R586	1-216-803-11	METAL CHIP	33	5%	1/16W	R651	1-216-841-11	METAL CHIP	47K	5%	1/16W
R587	1-216-803-11	METAL CHIP	33	5%	1/16W	R652	1-216-864-11	METAL CHIP	0	5%	1/16W
R588	1-216-833-11	METAL CHIP	10K	5%	1/16W	R653	1-216-845-11	METAL CHIP	100K	5%	1/16W
R589	1-216-801-11	METAL CHIP	22	5%	1/16W	R654	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R590	1-216-801-11	METAL CHIP	22	5%	1/16W	R655	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R591	1-216-801-11	METAL CHIP	22	5%	1/16W	R660	1-216-864-11	METAL CHIP	0	5%	1/16W
R592	1-216-864-11	METAL CHIP	0	5%	1/16W	R661	1-216-801-11	METAL CHIP	22	5%	1/16W
R593	1-216-864-11	METAL CHIP	0	5%	1/16W	R662	1-216-801-11	METAL CHIP	22	5%	1/16W
R594	1-216-853-11	METAL CHIP	470K	5%	1/16W	R664	1-216-801-11	METAL CHIP	22	5%	1/16W
R596	1-216-801-11	METAL CHIP	22	5%	1/16W	R665	1-216-801-11	METAL CHIP	22	5%	1/16W
R597	1-216-833-11	METAL CHIP	10K	5%	1/16W	R666	1-216-807-11	METAL CHIP	68	5%	1/16W
R599	1-216-801-11	METAL CHIP	22	5%	1/16W	R667	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R600	1-216-801-11	METAL CHIP	22	5%	1/16W	R668	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R601	1-216-803-11	METAL CHIP	33	5%	1/16W	R669	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R602	1-216-803-11	METAL CHIP	33	5%	1/16W	R670	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R603	1-216-833-11	METAL CHIP	10K	5%	1/16W	R671	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R604	1-216-801-11	METAL CHIP	22	5%	1/16W	R672	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R605	1-216-801-11	METAL CHIP	22	5%	1/16W	R673	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R606	1-216-801-11	METAL CHIP	22	5%	1/16W	R674	1-216-801-11	METAL CHIP	22	5%	1/16W
R607	1-216-801-11	METAL CHIP	22	5%	1/16W	R675	1-216-839-11	METAL CHIP	33K	5%	1/16W
R608	1-216-801-11	METAL CHIP	22	5%	1/16W	R676	1-216-864-11	METAL CHIP	0	5%	1/16W
R609	1-216-801-11	METAL CHIP	22	5%	1/16W	R677	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R610	1-216-801-11	METAL CHIP	22	5%	1/16W	R678	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R611	1-216-801-11	METAL CHIP	22	5%	1/16W	R679	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R612	1-216-801-11	METAL CHIP	22	5%	1/16W	R680	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R613	1-216-801-11	METAL CHIP	22	5%	1/16W	R681	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R614	1-216-801-11	METAL CHIP	22	5%	1/16W	R682	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R615	1-216-801-11	METAL CHIP	22	5%	1/16W	R683	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R616	1-216-801-11	METAL CHIP	22	5%	1/16W	R684	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R617	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R685	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R618	1-218-839-11	METAL GLAZE	470	0.50%	1/16W	R686	1-216-833-11	METAL CHIP	10K	5%	1/16W
R619	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R687	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R620	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W	R688	1-216-849-11	METAL CHIP	220K	5%	1/16W
R621	1-216-821-11	METAL CHIP	1K	5%	1/16W	R689	1-216-856-11	METAL CHIP	820K	5%	1/16W
R622	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R690	1-216-833-11	METAL CHIP	10K	5%	1/16W
R623	1-216-801-11	METAL CHIP	22	5%	1/16W	R691	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R624	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R692	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R625	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R693	1-216-857-11	METAL CHIP	1M	5%	1/16W
R626	1-216-864-11	METAL CHIP	0	5%	1/16W	R694	1-216-857-11	METAL CHIP	1M	5%	1/16W
R627	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R695	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R628	1-216-833-11	METAL CHIP	10K	5%	1/16W	R696	1-216-821-11	METAL CHIP	1K	5%	1/16W
R629	1-216-833-11	METAL CHIP	10K	5%	1/16W	R697	1-216-821-11	METAL CHIP	1K	5%	1/16W
R630	1-216-864-11	METAL CHIP	0	5%	1/16W	R699	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R633	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R701	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R634	1-216-807-11	METAL CHIP	68	5%	1/16W	R702	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
						R703	1-216-821-11	METAL CHIP	1K	5%	1/16W
						R704	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
						R705	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R706	1-216-809-11	METAL CHIP	100	5%	1/16W	R770	1-216-837-11	METAL CHIP	22K	5%	1/16W
R708	1-216-801-11	METAL CHIP	22	5%	1/16W	R771	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R709	1-216-801-11	METAL CHIP	22	5%	1/16W	R772	1-216-864-11	METAL CHIP	0	5%	1/16W
R710	1-216-801-11	METAL CHIP	22	5%	1/16W	R774	1-216-864-11	METAL CHIP	0	5%	1/16W
						R775	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R711	1-216-801-11	METAL CHIP	22	5%	1/16W						
R712	1-216-809-11	METAL CHIP	100	5%	1/16W	R776	1-216-851-11	METAL CHIP	330K	5%	1/16W
R713	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R777	1-216-841-11	METAL CHIP	47K	5%	1/16W
R714	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R779	1-216-809-11	METAL CHIP	100	5%	1/16W
R715	1-216-837-11	METAL CHIP	22K	5%	1/16W	R780	1-216-821-11	METAL CHIP	1K	5%	1/16W
						R781	1-216-837-11	METAL CHIP	22K	5%	1/16W
R716	1-216-801-11	METAL CHIP	22	5%	1/16W						
R717	1-216-801-11	METAL CHIP	22	5%	1/16W	R782	1-216-864-11	METAL CHIP	0	5%	1/16W
R718	1-216-801-11	METAL CHIP	22	5%	1/16W	R783	1-216-864-11	METAL CHIP	0	5%	1/16W
R719	1-216-864-11	METAL CHIP	0	5%	1/16W	R784	1-216-864-11	METAL CHIP	0	5%	1/16W
R720	1-216-801-11	METAL CHIP	22	5%	1/16W	R785	1-216-857-11	METAL CHIP	1M	5%	1/16W
						R787	1-216-821-11	METAL CHIP	1K	5%	1/16W
R721	1-216-809-11	METAL CHIP	100	5%	1/16W						
R722	1-216-801-11	METAL CHIP	22	5%	1/16W	R788	1-216-839-11	METAL CHIP	33K	5%	1/16W
R723	1-216-801-11	METAL CHIP	22	5%	1/16W	R789	1-216-819-11	METAL CHIP	680	5%	1/16W
R724	1-216-801-11	METAL CHIP	22	5%	1/16W	R790	1-216-833-11	METAL CHIP	10K	5%	1/16W
R725	1-216-801-11	METAL CHIP	22	5%	1/16W	R791	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R793	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R726	1-216-801-11	METAL CHIP	22	5%	1/16W						
R727	1-216-801-11	METAL CHIP	22	5%	1/16W	R794	1-216-809-11	METAL CHIP	100	5%	1/16W
R728	1-216-864-11	METAL CHIP	0	5%	1/16W	R795	1-216-857-11	METAL CHIP	1M	5%	1/16W
R729	1-216-864-11	METAL CHIP	0	5%	1/16W	R796	1-216-833-11	METAL CHIP	10K	5%	1/16W
R730	1-216-864-11	METAL CHIP	0	5%	1/16W	R797	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R798	1-216-839-11	METAL CHIP	33K	5%	1/16W
R731	1-216-833-11	METAL CHIP	10K	5%	1/16W						
R734	1-216-864-11	METAL CHIP	0	5%	1/16W	R799	1-216-819-11	METAL CHIP	680	5%	1/16W
R736	1-216-801-11	METAL CHIP	22	5%	1/16W	R800	1-216-821-11	METAL CHIP	1K	5%	1/16W
R737	1-216-801-11	METAL CHIP	22	5%	1/16W	R801	1-216-833-11	METAL CHIP	10K	5%	1/16W
R738	1-216-801-11	METAL CHIP	22	5%	1/16W	R802	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
						R803	1-216-833-11	METAL CHIP	10K	5%	1/16W
R739	1-216-801-11	METAL CHIP	22	5%	1/16W						
R740	1-216-801-11	METAL CHIP	22	5%	1/16W	R804	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R741	1-216-801-11	METAL CHIP	22	5%	1/16W	R805	1-216-837-11	METAL CHIP	22K	5%	1/16W
R742	1-216-833-11	METAL CHIP	10K	5%	1/16W	R806	1-216-833-11	METAL CHIP	10K	5%	1/16W
R743	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R807	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R808	1-216-833-11	METAL CHIP	10K	5%	1/16W
R744	1-216-825-11	METAL CHIP	2.2K	5%	1/16W						
R745	1-216-849-11	METAL CHIP	220K	5%	1/16W	R809	1-216-833-11	METAL CHIP	10K	5%	1/16W
R746	1-216-801-11	METAL CHIP	22	5%	1/16W	R812	1-216-835-11	METAL CHIP	15K	5%	1/16W
R747	1-216-801-11	METAL CHIP	22	5%	1/16W	R815	1-218-446-11	METAL CHIP	1	5%	1/16W
R748	1-216-801-11	METAL CHIP	22	5%	1/16W	R816	1-218-446-11	METAL CHIP	1	5%	1/16W
						R817	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R749	1-216-801-11	METAL CHIP	22	5%	1/16W						
R750	1-216-801-11	METAL CHIP	22	5%	1/16W	R818	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R751	1-216-821-11	METAL CHIP	1K	5%	1/16W	R819	1-218-446-11	METAL CHIP	1	5%	1/16W
R752	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	R820	1-218-446-11	METAL CHIP	1	5%	1/16W
R753	1-216-833-11	METAL CHIP	10K	5%	1/16W	R821	1-216-134-00	METAL CHIP	2.2	5%	1/8W
						R822	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R754	1-216-851-11	METAL CHIP	330K	5%	1/16W						
R755	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R823	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W
R756	1-216-864-11	METAL CHIP	0	5%	1/16W	R824	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R757	1-216-837-11	METAL CHIP	22K	5%	1/16W	R825	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R758	1-218-827-11	METAL GLAZE	150	0.50%	1/16W	R828	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W
						R829	1-216-833-11	METAL CHIP	10K	5%	1/16W
R759	1-218-864-11	METAL GLAZE	5.1K	0.50%	1/16W						
R760	1-216-821-11	METAL CHIP	1K	5%	1/16W	R831	1-216-833-11	METAL CHIP	10K	5%	1/16W
R761	1-216-864-11	METAL CHIP	0	5%	1/16W	R833	1-216-855-11	METAL CHIP	680K	5%	1/16W
R763	1-216-857-11	METAL CHIP	1M	5%	1/16W	R834	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
R764	1-216-833-11	METAL CHIP	10K	5%	1/16W	R835	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
						R837	1-216-837-11	METAL CHIP	22K	5%	1/16W
R765	1-216-839-11	METAL CHIP	33K	5%	1/16W						
R766	1-216-837-11	METAL CHIP	22K	5%	1/16W	R838	1-216-839-11	METAL CHIP	33K	5%	1/16W
R767	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R839	1-218-903-11	METAL GLAZE	220K	0.50%	1/16W
R768	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R840	1-216-849-11	METAL CHIP	220K	5%	1/16W
R769	1-216-821-11	METAL CHIP	1K	5%	1/16W	R842	1-216-851-11	METAL CHIP	330K	5%	1/16W

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
R843	1-216-849-11	METAL CHIP	220K	5%		1/16W	R904	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W
R845	1-216-845-11	METAL CHIP	100K	5%		1/16W	R905	1-216-864-11	METAL CHIP	0	5%		1/16W
R846	1-218-895-11	METAL GLAZE	100K	0.50%		1/16W	R906	1-216-833-11	METAL CHIP	10K	5%		1/16W
R847	1-218-862-11	METAL GLAZE	4.3K	0.50%		1/16W	R907	1-217-671-11	METAL CHIP	1	5%		1/10W
R848	1-218-871-11	METAL GLAZE	10K	0.50%		1/16W	R908	1-216-864-11	METAL CHIP	0	5%		1/16W
R849	1-218-877-11	METAL GLAZE	18K	0.50%		1/16W	R909	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W
R850	1-216-821-11	METAL CHIP	1K	5%		1/16W	R910	1-216-839-11	METAL CHIP	33K	5%		1/16W
R853	1-218-871-11	METAL GLAZE	10K	0.50%		1/16W	R911	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W
R854	1-216-789-11	METAL CHIP	2.2	5%		1/16W	R912	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W
R855	1-218-871-11	METAL GLAZE	10K	0.50%		1/16W	R913	1-216-839-11	METAL CHIP	33K	5%		1/16W
R856	1-218-855-11	METAL GLAZE	2.2K	0.50%		1/16W	R914	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W
R857	1-216-789-11	METAL CHIP	2.2	5%		1/16W	R917	1-216-864-11	METAL CHIP	0	5%		1/16W
R858	1-216-829-11	METAL CHIP	4.7K	5%		1/16W	R918	1-216-827-11	METAL CHIP	3.3K	5%		1/16W
R859	1-216-789-11	METAL CHIP	2.2	5%		1/16W	R919	1-216-821-11	METAL CHIP	1K	5%		1/16W
R860	1-216-789-11	METAL CHIP	2.2	5%		1/16W	R920	1-218-859-11	METAL GLAZE	3.3K	0.50%		1/16W
R861	1-216-798-11	METAL GLAZE	12	5%		1/16W	R921	1-216-864-11	METAL CHIP	0	5%		1/16W
R862	1-216-797-11	METAL CHIP	10	5%		1/16W	R922	1-216-864-11	METAL CHIP	0	5%		1/16W
R863	1-216-864-11	METAL CHIP	0	5%		1/16W	R923	1-216-864-11	METAL CHIP	0	5%		1/16W
R864	1-216-864-11	METAL CHIP	0	5%		1/16W	R924	1-218-907-11	METAL GLAZE	330K	0.50%		1/16W
R865	1-216-840-11	METAL CHIP	39K	5%		1/16W	R925	1-216-845-11	METAL CHIP	100K	5%		1/16W
R866	1-216-833-11	METAL CHIP	10K	5%		1/16W	R926	1-216-864-11	METAL CHIP	0	5%		1/16W
R867	1-216-833-11	METAL CHIP	10K	5%		1/16W	R927	1-216-864-11	METAL CHIP	0	5%		1/16W
R868	1-216-798-11	METAL GLAZE	12	5%		1/16W	R928	1-216-833-11	METAL CHIP	10K	5%		1/16W
R869	1-216-833-11	METAL CHIP	10K	5%		1/16W	R929	1-218-864-11	METAL GLAZE	5.1K	0.50%		1/16W
R870	1-216-798-11	METAL GLAZE	12	5%		1/16W	R930	1-216-857-11	METAL CHIP	1M	5%		1/16W
R871	1-216-797-11	METAL CHIP	10	5%		1/16W	R931	1-216-857-11	METAL CHIP	1M	5%		1/16W
R872	1-216-864-11	METAL CHIP	0	5%		1/16W	R932	1-216-845-11	METAL CHIP	100K	5%		1/16W
R873	1-216-833-11	METAL CHIP	10K	5%		1/16W	R933	1-216-845-11	METAL CHIP	100K	5%		1/16W
R874	1-216-797-11	METAL CHIP	10	5%		1/16W	R937	1-216-864-11	METAL CHIP	0	5%		1/16W
R875	1-216-833-11	METAL CHIP	10K	5%		1/16W	R938	1-216-864-11	METAL CHIP	0	5%		1/16W
R876	1-216-797-11	METAL CHIP	10	5%		1/16W	R939	1-216-864-11	METAL CHIP	0	5%		1/16W
R877	1-216-797-11	METAL CHIP	10	5%		1/16W	R940	1-216-864-11	METAL CHIP	0	5%		1/16W
R878	1-216-797-11	METAL CHIP	10	5%		1/16W	R941	1-216-864-11	METAL CHIP	0	5%		1/16W
R879	1-216-797-11	METAL CHIP	10	5%		1/16W	R942	1-216-821-11	METAL CHIP	1K	5%		1/16W
R880	1-216-833-11	METAL CHIP	10K	5%		1/16W	R943	1-216-864-11	METAL CHIP	0	5%		1/16W
R881	1-216-823-11	METAL CHIP	1.5K	5%		1/16W	R944	1-216-821-11	METAL CHIP	1K	5%		1/16W
R882	1-216-841-11	METAL CHIP	47K	5%		1/16W	R945	1-216-864-11	METAL CHIP	0	5%		1/16W
R883	1-216-797-11	METAL CHIP	10	5%		1/16W	R946	1-216-833-11	METAL CHIP	10K	5%		1/16W
R884	1-216-833-11	METAL CHIP	10K	5%		1/16W	R947	1-216-801-11	METAL CHIP	22	5%		1/16W
R885	1-216-837-11	METAL CHIP	22K	5%		1/16W	R948	1-216-833-11	METAL CHIP	10K	5%		1/16W
R886	1-216-833-11	METAL CHIP	10K	5%		1/16W	R949	1-216-833-11	METAL CHIP	10K	5%		1/16W
R887	1-216-833-11	METAL CHIP	10K	5%		1/16W	R950	1-216-833-11	METAL CHIP	10K	5%		1/16W
R888	1-216-833-11	METAL CHIP	10K	5%		1/16W	R951	1-216-801-11	METAL CHIP	22	5%		1/16W
R889	1-216-833-11	METAL CHIP	10K	5%		1/16W	R952	1-216-801-11	METAL CHIP	22	5%		1/16W
R890	1-216-821-11	METAL CHIP	1K	5%		1/16W	R953	1-216-801-11	METAL CHIP	22	5%		1/16W
R891	1-216-797-11	METAL CHIP	10	5%		1/16W	R954	1-216-801-11	METAL CHIP	22	5%		1/16W
R892	1-216-797-11	METAL CHIP	10	5%		1/16W	R955	1-216-801-11	METAL CHIP	22	5%		1/16W
R893	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W	R956	1-216-801-11	METAL CHIP	22	5%		1/16W
R894	1-217-671-11	METAL CHIP	1	5%		1/10W	R957	1-216-801-11	METAL CHIP	22	5%		1/16W
R895	1-216-854-11	METAL CHIP	560K	5%		1/16W	R958	1-216-801-11	METAL CHIP	22	5%		1/16W
R896	1-216-839-11	METAL CHIP	33K	5%		1/16W	R959	1-216-801-11	METAL CHIP	22	5%		1/16W
R897	1-217-671-11	METAL CHIP	1	5%		1/10W	R960	1-216-801-11	METAL CHIP	22	5%		1/16W
R898	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W	R961	1-216-801-11	METAL CHIP	22	5%		1/16W
R899	1-218-901-11	METAL GLAZE	180K	0.50%		1/16W	R962	1-216-801-11	METAL CHIP	22	5%		1/16W
R900	1-216-839-11	METAL CHIP	33K	5%		1/16W	R963	1-216-801-11	METAL CHIP	22	5%		1/16W
R901	1-217-671-11	METAL CHIP	1	5%		1/10W	R964	1-216-801-11	METAL CHIP	22	5%		1/16W
R902	1-216-841-11	METAL CHIP	47K	5%		1/16W	R965	1-216-801-11	METAL CHIP	22	5%		1/16W
R903	1-216-833-11	METAL CHIP	10K	5%		1/16W	R966	1-216-801-11	METAL CHIP	22	5%		1/16W

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark	
R967	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ014	1-216-864-11	METAL CHIP	0	5%	1/16W		
R968	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ015	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		
R969	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ016	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		
R970	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ017	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		
R971	1-216-801-11	METAL CHIP	22	5%		1/16W								
R972	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ018	1-216-801-11	METAL CHIP	22	5%	1/16W		
R973	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ020	1-216-833-11	METAL CHIP	10K	5%	1/16W		
R974	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ021	1-216-836-11	METAL CHIP	18K	5%	1/16W	(US/Canadian)	
R975	1-216-801-11	METAL CHIP	22	5%		1/16W								
R976	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ021	1-216-832-11	METAL CHIP	8.2K	5%	1/16W (E)		
							RZ031	1-216-817-11	METAL CHIP	470	5%	1/16W		
R977	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ032	1-216-821-11	METAL CHIP	1K	5%	1/16W		
R978	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ033	1-216-817-11	METAL CHIP	470	5%	1/16W		
R979	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ034	1-216-817-11	METAL CHIP	470	5%	1/16W		
R980	1-216-801-11	METAL CHIP	22	5%		1/16W								
R981	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ035	1-216-821-11	METAL CHIP	1K	5%	1/16W		
							RZ036	1-216-821-11	METAL CHIP	1K	5%	1/16W		
R982	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ037	1-216-821-11	METAL CHIP	1K	5%	1/16W		
R983	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ038	1-216-821-11	METAL CHIP	1K	5%	1/16W		
R984	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ039	1-216-817-11	METAL CHIP	470	5%	1/16W		
R985	1-216-801-11	METAL CHIP	22	5%		1/16W								
R986	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ040	1-216-821-11	METAL CHIP	1K	5%	1/16W		
							RZ051	1-216-864-11	METAL CHIP	0	5%	1/16W		
R987	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ053	1-216-841-11	METAL CHIP	47K	5%	1/16W		
R988	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ054	1-216-833-11	METAL CHIP	10K	5%	1/16W		
R989	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ055	1-216-831-11	METAL CHIP	6.8K	5%	1/16W		
R990	1-216-801-11	METAL CHIP	22	5%		1/16W								
R991	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ057	1-216-833-11	METAL CHIP	10K	5%	1/16W		
							RZ060	1-216-864-11	METAL CHIP	0	5%	1/16W		
R992	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ061	1-216-843-11	METAL CHIP	68K	5%	1/16W		
R993	1-216-801-11	METAL CHIP	22	5%		1/16W	RZ062	1-216-805-11	METAL CHIP	47	5%	1/16W		
R994	1-216-809-11	METAL CHIP	100	5%		1/16W	RZ063	1-216-805-11	METAL CHIP	47	5%	1/16W		
R995	1-216-809-11	METAL CHIP	100	5%		1/16W								
R996	1-216-833-11	METAL CHIP	10K	5%		1/16W	RZ064	1-216-805-11	METAL CHIP	47	5%	1/16W		
							RZ065	1-216-833-11	METAL CHIP	10K	5%	1/16W		
R997	1-216-829-11	METAL CHIP	4.7K	5%		1/16W	< SWITCH >							
R998	1-216-829-11	METAL CHIP	4.7K	5%		1/16W	S001	1-571-275-11	SWITCH, SLIDE (CONTROL 1)					
R999	1-216-829-11	METAL CHIP	4.7K	5%		1/16W	S002	1-571-275-11	SWITCH, SLIDE (CONTROL 2)					
< COMPOSITION CIRCUIT BLOCK >							< THERMISTOR >							
* RB280	1-233-270-11	NETWORK, RES (8 GANG)	10K				TH001	1-810-814-21	THERMISTOR, NTC (1608)					
* RB281	1-233-270-11	NETWORK, RES (8 GANG)	10K				TH002	1-810-814-21	THERMISTOR, NTC (1608)					
* RB282	1-233-270-11	NETWORK, RES (8 GANG)	10K				< VIBRATOR >							
* RB283	1-233-270-11	NETWORK, RES (8 GANG)	10K				X001	1-767-402-21	VIBRATOR, CRYSTAL (22.5792MHz)					
* RB284	1-233-270-11	NETWORK, RES (8 GANG)	10K				X002	1-767-399-11	VIBRATOR, CRYSTAL (24.576MHz)					
* RB285	1-233-270-11	NETWORK, RES (8 GANG)	10K				X003	1-767-401-11	VIBRATOR, CRYSTAL (27MHz)					
* RB286	1-233-270-11	NETWORK, RES (8 GANG)	10K				X004	1-578-689-21	VIBRATOR (8MHz)					
* RB287	1-233-270-11	NETWORK, RES (8 GANG)	10K				X005	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)					
* RB288	1-233-270-11	NETWORK, RES (8 GANG)	10K											
* RB289	1-233-270-11	NETWORK, RES (8 GANG)	10K				X090	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)					
< VARIABLE RESISTOR >							X280	1-767-474-21	OSCILLATOR, CRYSTAL (66MHz)					
RV001	1-238-663-11	RES, ADJ, CARBON	4.7K											
RV479	1-238-663-11	RES, ADJ, CARBON	4.7K											
< RESISTER >														
RZ005	1-216-801-11	METAL CHIP	22	5%		1/16W								

Ref. No.	Part No.	Description	Remark
*	A-6065-025-A	PS-393 BOARD, COMPLETE (US/Canadian)	
*	A-6065-000-A	PS-393 BOARD, COMPLETE (E)	

(Ref.No. 4,000 Series)			
	1-533-223-11	HOLDER, FUSE	
< CAPACITOR >			
△ C902	1-104-705-11	FILM 0.1uF 20% 250V	
C951	1-130-467-00	MYLAR 470PF 5% 50V	
C952	1-124-523-11	ELECT 4700uF 20% 16V	
C953	1-124-563-11	ELECT 2200uF 20% 25V	
C954	1-124-721-11	ELECT 10uF 20% 50V	
C955	1-124-721-11	ELECT 10uF 20% 50V	
C957	1-124-721-11	ELECT 10uF 20% 50V	
< CONNECTOR >			
△ CN901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	
△ CN902	1-564-321-21	PIN, CONNECTOR 2P	
△ CN903	1-564-321-00	PIN, CONNECTOR 2P	
* CN951	1-564-241-11	PIN, CONNECTOR (B4P-VH) 4P	
* CN952	1-564-509-11	PLUG, CONNECTOR 6P	
< DIODE >			
△ D951	8-719-210-21	DIODE 11EQS04	
△ D952	8-719-210-21	DIODE 11EQS04	
△ D953	8-719-210-21	DIODE 11EQS04	
△ D954	8-719-210-21	DIODE 11EQS04	
△ D955	8-719-914-44	DIODE DAP202K	
< EARTH TERMINAL >			
* ET951	1-537-738-21	TERMINAL, EARTH	
< FILTER >			
FL951	1-235-096-00	FILTER, LINE	
FL952	1-235-096-00	FILTER, LINE	
△ LF901	1-424-656-11	FILTER, LINE	
< IC >			
△ IC951	8-759-701-59	IC NJM78M09FA	
△ IC953	8-759-245-86	IC TA7912S	
< COIL >			
L951	1-407-500-00	INDUCTOR 4.7mH	
< RESISTOR >			
R951	1-216-097-91	METAL GLAZE 100K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
*	A-6065-030-A	TT-701 BOARD, COMPLETE	

(Ref.No. 5,000 Series)			
< CAPACITOR >			
C001	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C002	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C005	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C011	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C014	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C015	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C020	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C025	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C026	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C027	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C028	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C029	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C030	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C031	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C032	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C033	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C034	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C035	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C036	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C037	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C038	1-164-363-11	CERAMIC CHIP 560PF 5% 50V	
C039	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C040	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C041	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C042	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C043	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C044	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C045	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C046	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C047	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C048	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C049	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C050	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C051	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C052	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C053	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C054	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C055	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C056	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C057	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C058	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C059	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C060	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C061	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	
C062	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C063	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C065	1-104-851-11	TANTAL. CHIP 10uF 20% 10V	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C067	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	< RESISTOR >			
C068	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	R001	1-216-809-11	METAL CHIP 100 5%	1/16W
C070	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	R002	1-211-992-11	METAL GLAZE 91 0.50%	1/16W
C072	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	R005	1-216-815-11	METAL CHIP 330 5%	1/16W
C073	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	R006	1-216-841-11	METAL CHIP 47K 5%	1/16W
C074	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	R007	1-216-833-11	METAL CHIP 10K 5%	1/16W
C075	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	R008	1-216-810-11	METAL CHIP 120 5%	1/16W
C076	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	R009	1-216-810-11	METAL CHIP 120 5%	1/16W
C077	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	R010	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
C084	1-104-852-11	TANTAL. CHIP 22uF 20%	10V	R011	1-216-850-11	METAL CHIP 270K 5%	1/16W
C085	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	R012	1-216-833-11	METAL CHIP 10K 5%	1/16W
C086	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	R015	1-216-839-11	METAL CHIP 33K 5%	1/16W
C087	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	R017	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
C088	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	R018	1-216-845-11	METAL CHIP 100K 5%	1/16W
C089	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	R021	1-216-845-11	METAL CHIP 100K 5%	1/16W
< CONNECTOR >				R022	1-216-847-11	METAL CHIP 150K 5%	1/16W
CN001	1-779-342-21	CONNECTOR, FFC/FPC 42P		R027	1-216-154-00	METAL GLAZE 15 5%	1/8W
* CN002	1-695-154-11	SOCKET, CONNECTOR 18P		R028	1-216-821-11	METAL CHIP 1K 5%	1/16W
* CN003	1-764-895-21	SOCKET, CONNECTOR 10P		R029	1-216-797-11	METAL CHIP 10 5%	1/16W
CN004	1-580-055-21	PIN, CONNECTOR 2P		R030	1-216-817-11	METAL CHIP 470 5%	1/16W
CN005	1-779-341-11	CONNECTOR, FFC/FPC 23P		R031	1-216-833-11	METAL CHIP 10K 5%	1/16W
CN006	1-779-341-11	CONNECTOR, FFC/FPC 23P		R032	1-216-845-11	METAL CHIP 100K 5%	1/16W
CN007	1-779-341-11	CONNECTOR, FFC/FPC 23P		R034	1-218-896-11	METAL GLAZE 110K 0.50%	1/16W
< DIODE >				R035	1-218-896-11	METAL GLAZE 110K 0.50%	1/16W
D001	8-719-404-49	DIODE MA111		R036	1-216-154-00	METAL GLAZE 15 5%	1/8W
D002	8-719-404-49	DIODE MA111		R037	1-216-856-11	METAL CHIP 820K 5%	1/16W
D003	8-719-421-27	DIODE MA728		R038	1-216-856-11	METAL CHIP 820K 5%	1/16W
< IC >				R039	1-216-820-11	METAL CHIP 820 5%	1/16W
IC001	8-759-449-56	IC SSI33P3720		R040	1-216-797-11	METAL CHIP 10 5%	1/16W
IC002	8-752-069-93	IC CXA1791M-T6		R041	1-216-837-11	METAL CHIP 22K 5%	1/16W
IC003	8-759-701-39	IC NJM3404AM		R042	1-216-837-11	METAL CHIP 22K 5%	1/16W
IC004	8-759-701-39	IC NJM3404AM		R043	1-216-864-11	METAL CHIP 0 5%	1/16W
IC005	8-759-062-66	IC TC7S66F(TE85R)		R044	1-216-845-11	METAL CHIP 100K 5%	1/16W
< COIL >				R045	1-216-864-11	METAL CHIP 0 5%	1/16W
L001	1-412-031-11	INDUCTOR CHIP 47uH		R046	1-216-845-11	METAL CHIP 100K 5%	1/16W
L002	1-412-031-11	INDUCTOR CHIP 47uH		R047	1-216-834-11	METAL CHIP 12K 5%	1/16W
L003	1-412-031-11	INDUCTOR CHIP 47uH		R048	1-216-851-11	METAL CHIP 330K 5%	1/16W
L005	1-409-529-41	COIL, CHOKE 10uH		R049	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
< PHOTO INTERRUPTER >				R050	1-216-817-11	METAL CHIP 470 5%	1/16W
PH001	8-749-011-97	PHOTO INTERRUPTER GP1S93		R051	1-216-833-11	METAL CHIP 10K 5%	1/16W
< TRANSISTOR >				R052	1-218-872-11	METAL GLAZE 11K 0.50%	1/16W
Q001	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R053	1-218-859-11	METAL GLAZE 3.3K 0.50%	1/16W
Q002	8-729-230-63	TRANSISTOR 2SC4116-YG		R054	1-216-837-11	METAL CHIP 22K 5%	1/16W
Q003	8-729-805-25	TRANSISTOR 2SB1121		R055	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q004	8-729-805-25	TRANSISTOR 2SB1121		R056	1-216-857-11	METAL CHIP 1M 5%	1/16W
Q005	8-729-805-25	TRANSISTOR 2SB1121		R057	1-216-864-11	METAL CHIP 0 5%	1/16W
Q007	8-729-230-63	TRANSISTOR 2SC4116-YG		R058	1-216-864-11	METAL CHIP 0 5%	1/16W
Q008	8-729-015-76	TRANSISTOR UN5211-TX		R059	1-216-864-11	METAL CHIP 0 5%	1/16W
Q009	8-729-230-63	TRANSISTOR 2SC4116-YG		R060	1-216-864-11	METAL CHIP 0 5%	1/16W
				R061	1-216-864-11	METAL CHIP 0 5%	1/16W
				R062	1-216-815-11	METAL CHIP 330 5%	1/16W
				R063	1-216-809-11	METAL CHIP 100 5%	1/16W
				R064	1-216-833-11	METAL CHIP 10K 5%	1/16W
				R065	1-216-833-11	METAL CHIP 10K 5%	1/16W
				R066	1-216-864-11	METAL CHIP 0 5%	1/16W
				R067	1-216-864-11	METAL CHIP 0 5%	1/16W
				R068	1-216-864-11	METAL CHIP 0 5%	1/16W
				R069	1-216-864-11	METAL CHIP 0 5%	1/16W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R070	1-216-821-11	METAL CHIP 1K	5%	1/16W	△ T901	1-431-174-11	TRANSFORMER, POWER (US, Canadian)
R071	1-216-841-11	METAL CHIP 47K	5%	1/16W	△ T901	1-431-175-11	TRANSFORMER, POWER (E)
R075	1-216-814-11	METAL CHIP 270	5%	1/16W			
R077	1-216-833-11	METAL CHIP 10K	5%	1/16W	ACCESSORIES & PACKING MATERIALS		
R078	1-216-833-11	METAL CHIP 10K	5%	1/16W	*****		
R082	1-216-864-11	METAL CHIP 0	5%	1/16W	1-475-086-21	COMMANDER, STANDARD (RMT-D100A)	(US, Canadian)
R083	1-216-864-11	METAL CHIP 0	5%	1/16W	1-475-086-31	COMMANDER, STANDARD (RMT-D100E) (E)	
R088	1-216-837-11	METAL CHIP 22K	5%	1/16W	1-775-454-21	CORD, CONNECTION (AUDIO 1.5 m)	(US, Canadian)
R090	1-216-833-11	METAL CHIP 10K	5%	1/16W	1-776-078-31	CORD, CONNECTION (S-VIDEO CABLE 1.5m)	
R091	1-216-841-11	METAL CHIP 47K	5%	1/16W	1-782-149-11	CORD, CONNECTION (VIDEO CABLE 1.5m)	
R092	1-216-825-11	METAL CHIP 2.2K	5%	1/16W	1-782-150-11	CORD, CONNECTION	
R093	1-216-833-11	METAL CHIP 10K	5%	1/16W		(AUDIO (STEREO) CABLE 1.5m)	
R095	1-216-853-11	METAL CHIP 470K	5%	1/16W	3-694-922-01	SHEET, PROTECTION	
R096	1-216-851-11	METAL CHIP 330K	5%	1/16W	3-859-359-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	(US, Canadian)
R097	1-216-837-11	METAL CHIP 22K	5%	1/16W	3-859-359-21	MANUAL, INSTRUCTION	(ENGLISH, CHINESE) (E)
R098	1-216-821-11	METAL CHIP 1K	5%	1/16W			
R099	1-216-837-11	METAL CHIP 22K	5%	1/16W	* 3-975-586-01	INDIVIDUAL CARTON (US,Canadian)	
R100	1-216-837-11	METAL CHIP 22K	5%	1/16W	* 3-975-586-11	INDIVIDUAL CARTON (E)	
R101	1-216-864-11	METAL CHIP 0	5%	1/16W	* 3-975-591-01	CUSHION	
R102	1-216-809-11	METAL CHIP 100	5%	1/16W	9-939-686-01	LID, BATTERY CASE (for RMT-100A/D100E)	
< SWITCH >							
S001	1-771-046-11	SWITCH, PUSH LEVER (TRAY)					
MISCELLANEOUS				*****			
*****				*****			
55	1-782-406-11	CABLE, FLEXIBLE FLAT (FFF-15) 8P					
65	1-782-197-11	CABLE, FLEXIBLE FLAT (FFD-1)					
67	1-782-198-11	CABLE, FLEXIBLE FLAT (FDC-3)					
69	1-475-109-11	BLOCK, TOUCH SWITCH					
106	1-782-195-11	CABLE, FLEXIBLE FLAT (FFF-13)					
108	1-782-194-11	CABLE, FLEXIBLE FLAT (FFM-15)					
109	1-782-191-11	CABLE, FLEXIBLE FLAT (FTM-3)					
111	1-782-193-11	CABLE, FLEXIBLE FLAT (FAM-5)					
112	1-782-192-11	CABLE, FLEXIBLE FLAT (FAM-4)					
△ 120	1-468-199-11	POWER BLOCK (SWITCHING REGULATOR)					
			(US, Canadian)				
△ 120	1-468-200-11	POWER BLOCK (SWITCHING REGULATOR)(E)					
* 121	1-543-830-11	CLAMP, SLEEVE FERRITE					
△ 207	8-820-005-01	OPTICAL PICK-UP KHS-180A/J1N					
208	1-665-390-11	OP-15 FLEXIBLE BOARD					
212	1-665-327-11	LT-31 FLEXIBLE BOARD					
217	8-749-013-33	IC KU160 (CD SENSOR)					
△ CNP901	1-558-568-21	CORD, POWER (E)					
△ CNP901	1-559-583-21	CORD, POWER (US, Canadian)					
△ F001	1-532-203-00	FUSE, TIME-LAG (E)					
△ F001	1-532-743-11	FUSE, GLASS TUBE (US, Canadian)					
M501	X-3947-137-1	MOTOR ASSY, SLED					
M901	1-698-944-11	MOTOR, DC (SPINDLE)					
M902	X-3947-138-1	MOTOR ASSY, SKEW					
M903	1-698-348-31	MOTOR, DC (LOADING)					

HARDWARE LIST

#1	7-685-663-79	SCREW +BVTP 4X16 TYPE2 IT-3
#2	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#4	7-682-645-01	SCREW +PS 3X4
#5	7-624-106-04	STOP RING 3.0, TYPE -E
#6	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT
#7	7-627-852-08	SCREW,PRECISION +P 1.7X2.5
#8	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT
#9	7-627-852-17	+P 1.7X4

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

